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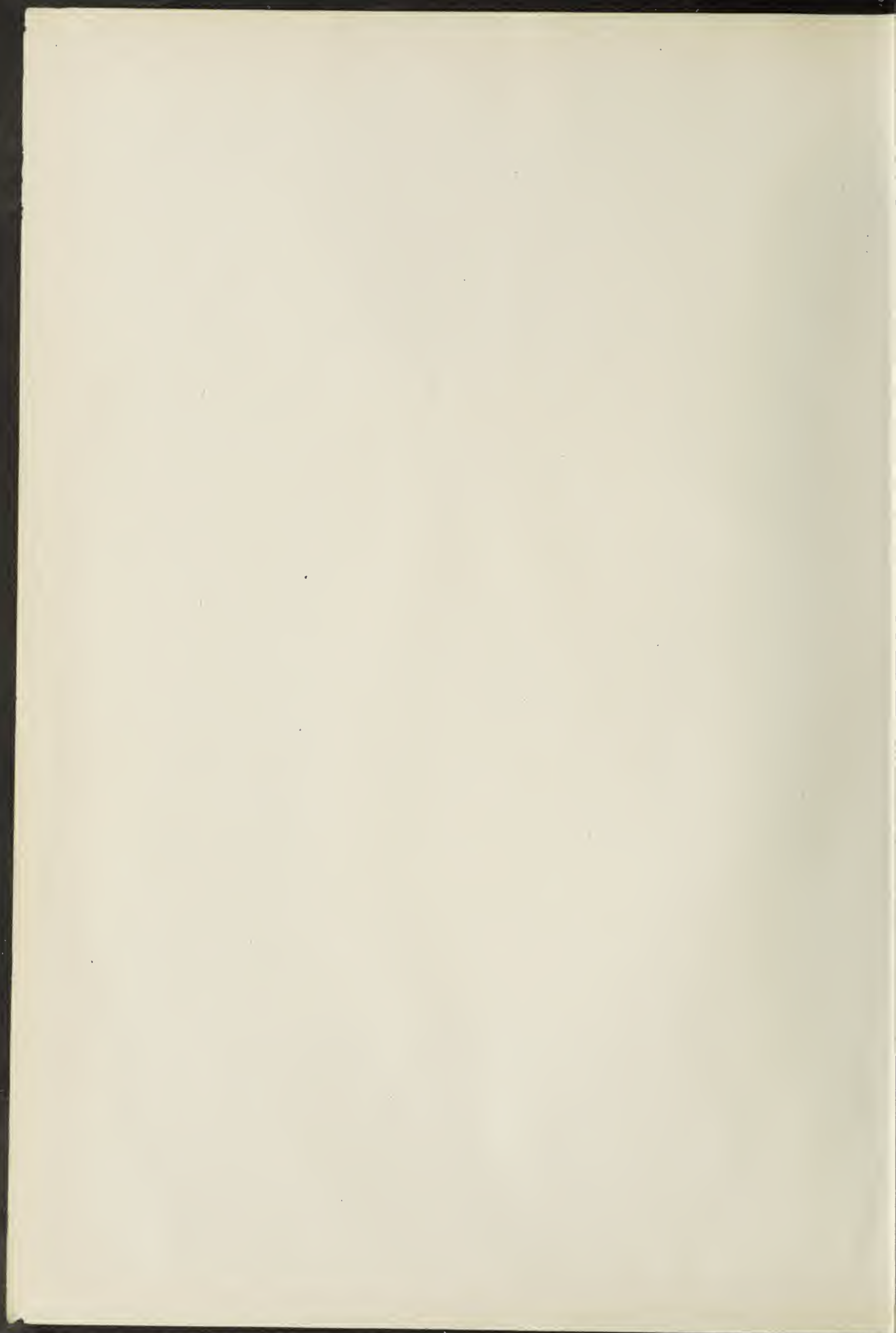
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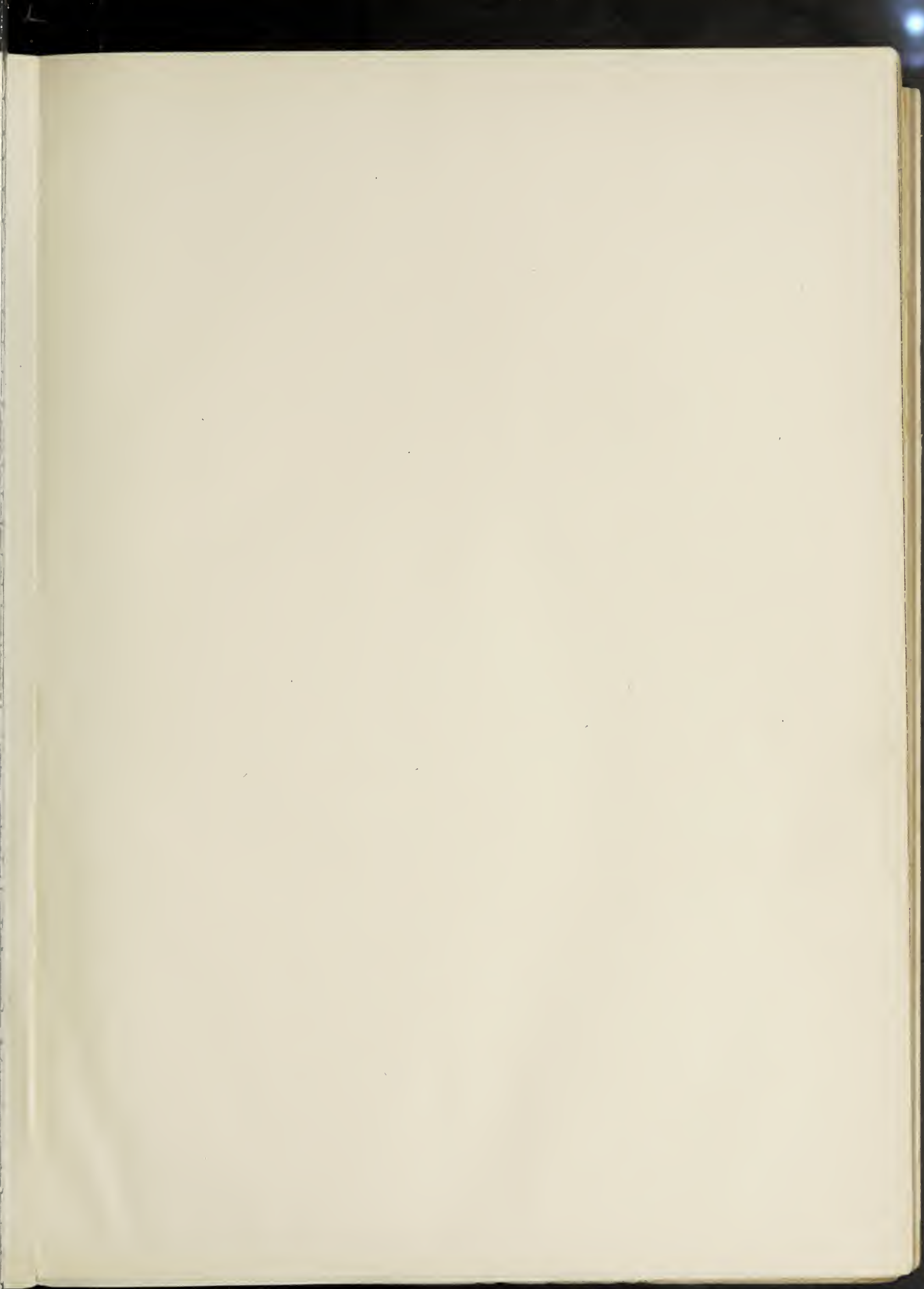
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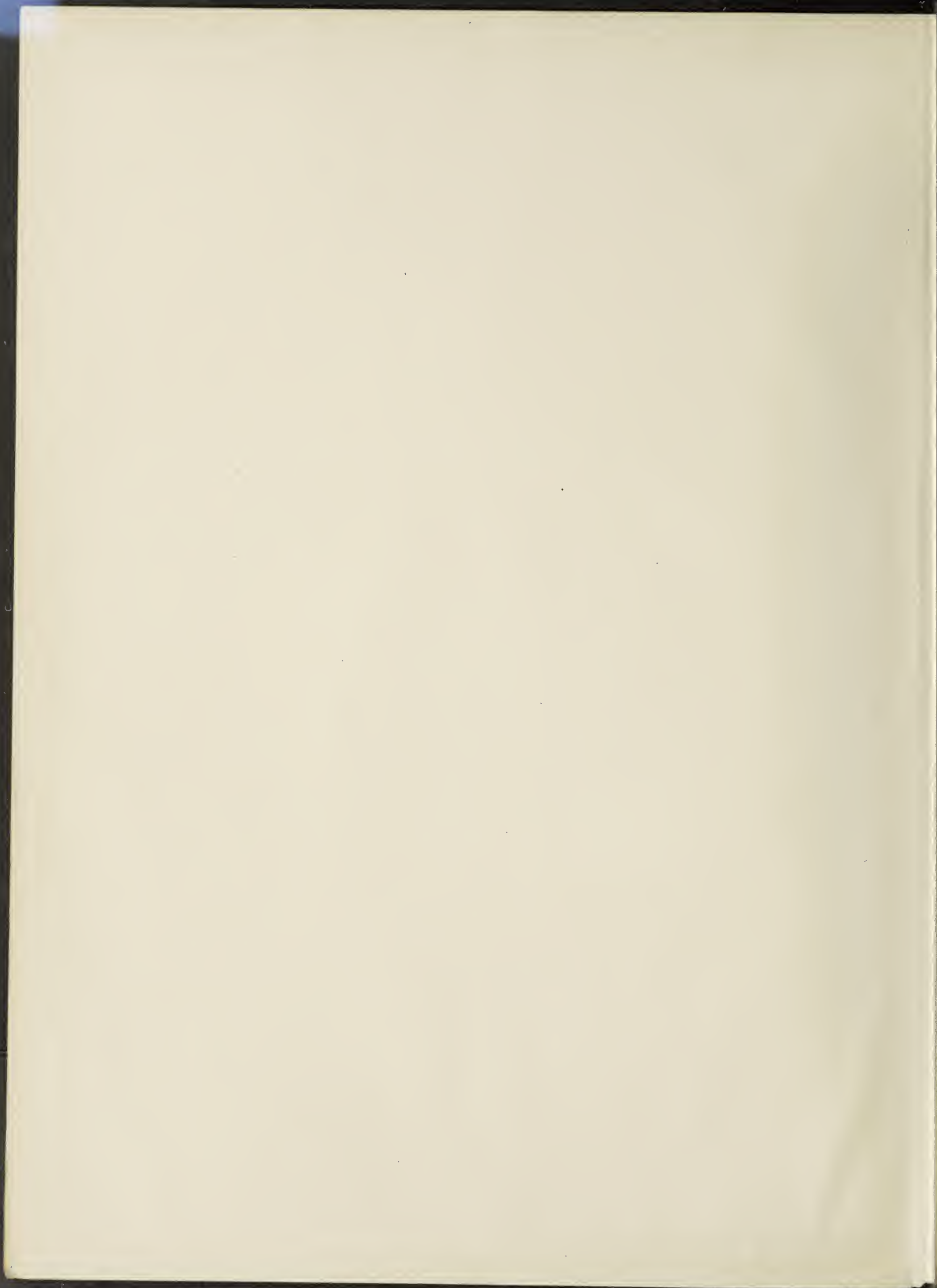
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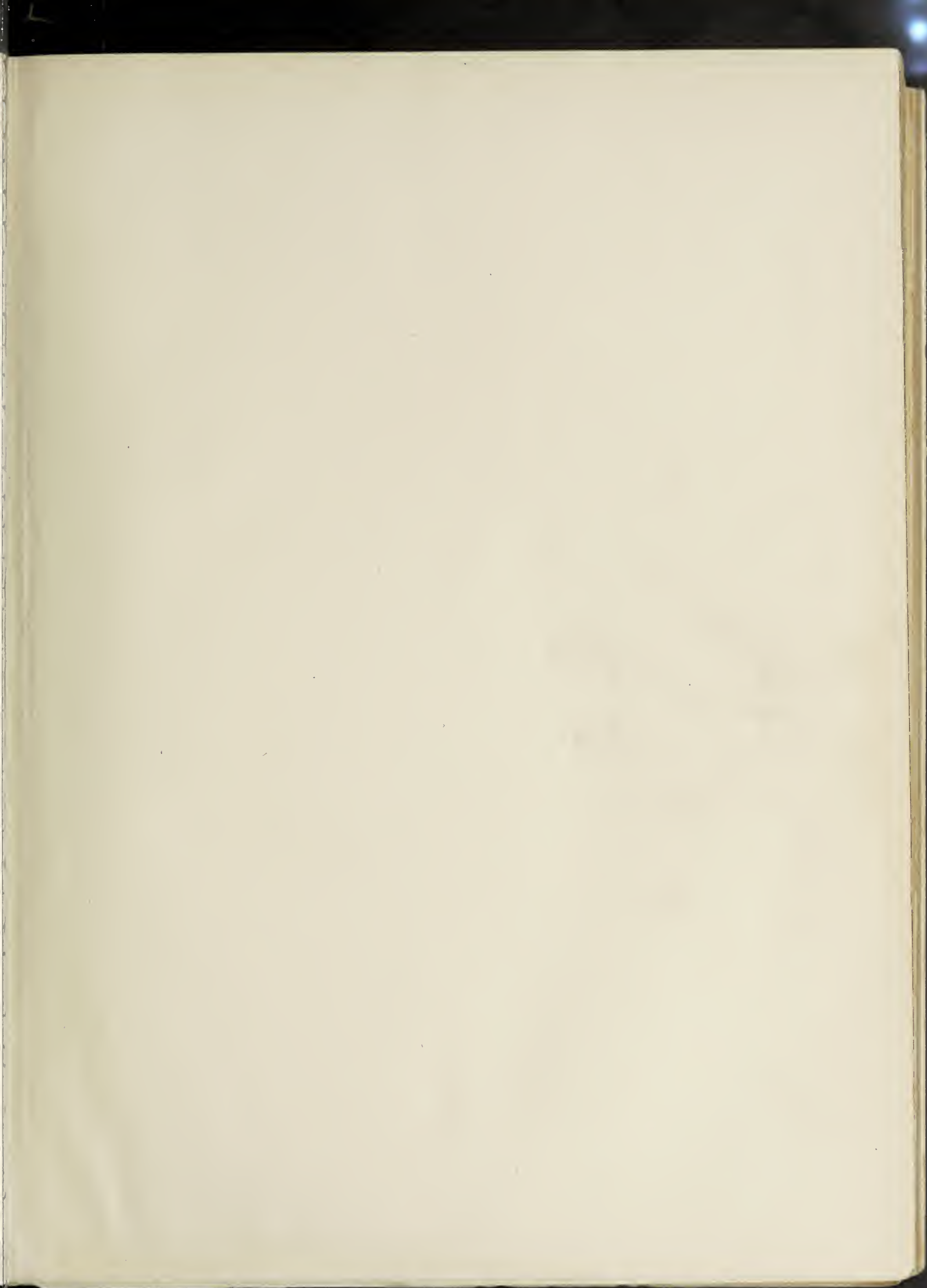
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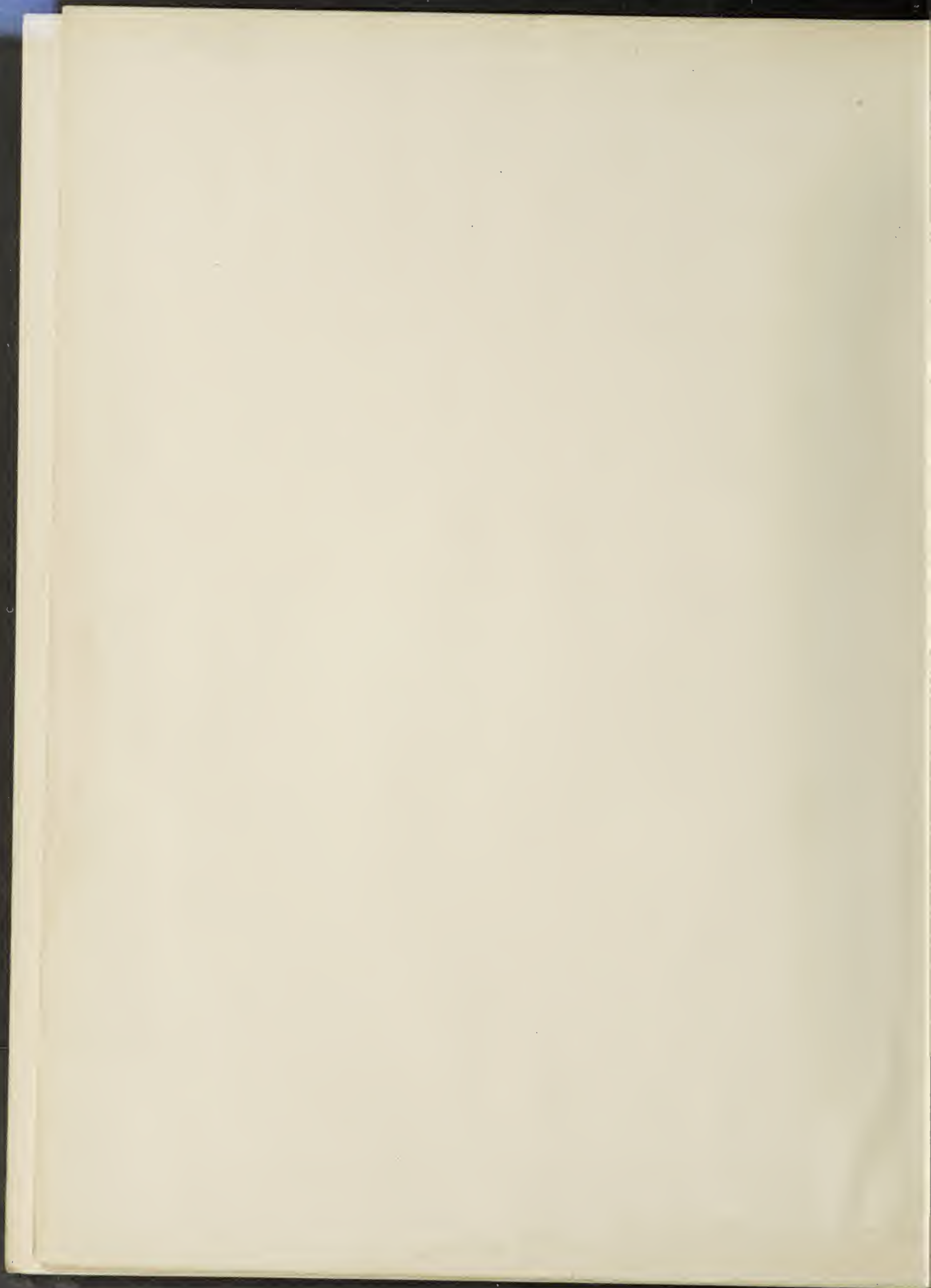
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Help your prospective customer decide on the style of house he wants, by showing him the many beautiful designs contained in the Bungalow Book. They will make him appreciate the fact that an attractive and substantial brick home can be built at a reasonable cost. Create an interest in clay products by distributing a few of these books among prospective home builders in your city.

Price, 50 cents, postpaid.

BRICK AND CLAY RECORD, 445 Plymouth Court CHICAGO

ST. JOSEPH'S CHURCH, REMARKABLE FOR BRICKWORK



(Description on Page 19.)

ST. JOSEPH'S ROMAN CATHOLIC CHURCH, BABYLON, LONG ISLAND.

This illustration Gives a Good idea of the Texture of the Exterior Brick, which is of a Rough Hard Mould, Sand Finished Variety in Various Shades from Medium Reds to Rich Dark Brown, Purple and Blackish Tints. Relley & Steinback, Architects.

BRICK and CLAY RECORD

VOL. LXII.

CHICAGO, JANUARY 1, 1913

Number One

One Year in CLAY PRODUCTS

*Forecast by
Manufacturers
Indicate Coming
Year Will See
Biggest Boom of
Years in
Burned Clay.*



*Unusual Activ-
ity Marks Close
of 1912 in All
Construction
Work. Year
Shows Increase
Over Previous
Period.*



PROSPERITY for 1913!

That is the predictions of financiers, of men of affairs, of manufacturers in all branches of human endeavor. Not for many years has there been such a feeling of security, of confidence and assurance. And this feeling is reflected in every mart of trade. The steel mills—the great barometers of business, are six months behind in their orders and refuse to take further contracts contingent on delivery short of a year.

What makes all this feeling of sanguinity—why this great faith in the prosperity of the Nation? It is true there was a record crop the past year. It is true there was unusual activity in all branches of commerce. It is true the banking interests of the country report heavy deposits. Still, these things have happened before.

Confidence is the keynote—CONFIDENCE in ourselves—CONFIDENCE in each other. The people of the Nation have profited by the bugbears of the past. They have recognized the foolishness of flying off into a flutter on the slightest provocation. They have resolved to steady down and they have done it quietly and determinedly.

Capital has CONFIDENCE in labor. Labor has CONFIDENCE in capital. They have passed through the stage of suspicion and distrust. They have learned the foolhardiness of antagonism.

1912 PROSPERITY EXPECTED TO BE SURPASSED IN 1913

PROSPERITY is the keynote for 1913. The Nation's leaders are a unit in predicting an unusual business in all lines and the Clayworkers are expecting to reap a greater harvest than in 1912 when the slump of 1911 was wiped out and great strides taken towards placing burned clay in the lead of all building materials.

In the following pages "Brick and Clay Record" gives the forecast of the coming year as seen by influential men in the Clay Products Industry. These writers review the trade of the past year and give their reasons for predicting unusual activity the coming season.



AMERICA led the world in business in 1912. Of the \$35,000,000,000 trade done in all nations—which is \$4,000,000,000

more than that of 1911 and double that of 1890, the United States ruled supreme in commerce and industry, in the products of the farm and in finance.

And in all branches of commerce and industry none showed more marked increase than that of clay products.

After a decline of \$7,800,000 in 1911 over 1910, as reported by the United States Geological Survey, the manufacture of clay products took on new life and advices from "Brick and Clay Record" correspondents and advance reports issued by the Government, show that 1912 was a

banner year in the history of the industry with the possible exception of 1906.

The greatest activity was shown in building brick, although the pavers made a wonderful gain. The other major branches of the industry—hollow block, sewer pipe, drain tile, terra cotta and encaustic tile, were close behind in the advances over the previous year and almost as great an increase was shown in pottery, fire brick and the other minor branches.

In building construction work 1912 was ahead of any previous year for a decade, and clay products entered into it more generally than ever before. Building was

LEADING MANUFACTURERS PREDICT RECORD-BREAKER IN 1913

not confined to any one city or section but seemed to be general. The larger cities, of course, showed more activity. New York, Chicago, Philadelphia, St. Louis, Boston, Baltimore, San Francisco, Seattle, Portland, Dallas, Atlanta, Memphis, Chattanooga and Louisville, showing unusual activity.

Reports from "Brick and Clay Record" correspondents indicate that the East profited more from building construction, but the Middle West and South were not far behind.

In the East there was considerable road improvement too, but the Middle West was more active, and Ohio particularly, laid more brick streets and highways than in any previous year.

In Kansas, Iowa, Nebraska and neighboring states where agriculture has the reins the sewer pipe and drain tile interests felt the general prosperity, but most of the prosperity enjoyed by others will be reflected in all branches of the industry the coming year, because of the nature of the product and its uses. Advices from these sections indicate a great year for vitrified sewer pipe and drain tile.

In the pottery fields of Ohio and Pennsylvania the year has been very encouraging to those engaged in this branch of the clay products industry and so hopeful is the future, extra preparations are being made for increased output in 1913.

Encaustic tile made a remarkable advance during the year. Naturally the increase in building construction was felt in this line and the manufacturers record their most prosperous season for several years.

The terra cotta makers kept pace with the brickmakers and architects have specified this material very liberally. One most encouraging sign is that the architects are realizing the possibilities of terra cotta for trimmings as well as for facings and many of the greatest office buildings erected during the year bear terra cotta in lieu of the regulation stone or marble trimmings.

Reviewing the year as a whole, clay products have nothing to complain of. The many concrete failures, the high cost of lumber and all the other contributing causes—particularly the increased interest of the clay manufacturer in publicity work in educating the public.

SEES GREAT YEAR FOR BUILDING BRICK



"The year 1912 was a good one for burned clay and the indications are that 1913 will be even more favorable. We are preparing for an unusually heavy season in building construction."

C. B. VERNOOY, vice president and treasurer of the Illinois Brick Company, Chicago.

The number of new clay plants erected during the year—far exceeds that of any previous year, and the expressed plans for 1913 show that the manufacturers have faith in the future of the industry. There is every indication that more clay plants will be erected or enlarged the coming season than ever before in the history of the industry and that there will be unusual activity.

Extraordinary activity in plant construction was shown in two sections of North America—in the Southwestern States and in Canada. Texas easily takes the lead in the former section. Some of the largest plants constructed during the year were in the Lone Star state. Canada, however, showed the most activity. The encouragement offered by the Canadian government in all development of the natural resources has done much toward bringing about this result. Towns and cities have sprung up overnight like mushrooms and the large corporations that have backed these enterprises have seen first that there was some facilities for manufacturing

building material. This meant, of course, that brick plants had to be erected and some of these plants rival with the larger plants in the United States in cost of construction, in capacity and in equipment.

The machinery people, naturally, have felt the benefit of this activity and some of the concerns, particularly those that turned their attention to export, recorded the largest sales for years.

Plans of these same manufacturers, as well as those of the clayworker, indicate that there is every confidence in the belief that 1913 is to be the banner year in burned clay. The Nation's leaders in finance, in commerce and industry and even in politics are a unit in predicting an era of unusual prosperity of the substantial sort and the only thing that will keep the clayworker from getting his share will be his lack of initiative.

With a united front—a common desire to make burned clay the most desirable material, who will gainsay that clay products will not take its place in the building and improvement of the Nation?

Here's wishing that all our dreams may come true and that the harvest will be a great one.

LEADERS SEE PROSPERITY AHEAD IN 1913

Clay Product Manufacturers Feel Optimistic Over Prospects for Burned Clay in the Coming Year

LEADING men in the clay industry are very optimistic over the 1913 outlook. The following expressions were received by "Brick and Clay Record" in response to letters of invitation asking for personal opinions on the year just closed and for a personal forecast for 1913:

United and Persistent Effort Needed.

D. E. Reagan, President, Hocking Valley Products Co., Columbus.—"I am pleased to state that our brick sales have exceeded our expectations during 1912, and we have every reason to believe that we will have practically all we can do during the coming year, 1913. Prospects for business look very bright, and we are more than pleased that our specialties in the face brick line are meeting with such favor and demand, not only in this country, but also in Canada, which is very encouraging to a new plant whose products have only been on the market for little more than a year.

"I am satisfied that the impervious face brick has gained a sure foothold, and that the buildings of the future will demand brick of this nature, in keeping with the demand for permanent structures. This is particularly true of the impervious brick now being produced of such varied and beautiful textures, which far surpass anything ever produced in brick, to suit the taste and fancy of every one. There is no question as to the future of good impervious brick, but it requires the united and persistent efforts of all who are interested, to exploit and widen the field, since in many localities the use of high grade facing brick is but little known, where the building of wood and stucco structures still prevails, due solely to the fact that brick has not been properly pushed, and where the initial cost has been excessive on account of freight rates, but this will be largely overcome when it is considered and known that the upkeep or maintenance of a good brick structure is of trivial cost as compared with wood or the inferior structures, and when the difference in insurance rates is also considered and the permanent durability of brick as compared with the others. We wish for 'Brick and Clay Record' the prosperity it deserves during the coming year."

Brickmakers, "Nerveless Aggregation."

J. M. Adams, President, American Face Brick Association, Columbus, Ohio.—"I am very much pleased with the way in which your paper has been boosting brick as a high-class building material. I am one of those who believe that too much cannot be said in favor of burned clay products for building purposes. Many kinds of

SEES GREAT YEAR AHEAD FOR FACE BRICK



"Our brick sales have exceeded our expectations during 1912 and we have every reason to believe that we will have all we can do in 1913."

D. E. REAGAN, president of the Hocking Valley Products Co., Columbus, Ohio.

building material have appeared on the market from time to time, but failed to stand the test of time, but burned clay products have stood the test and are more prized today than ever before. But I did not start out to discuss the value of clay products. I merely wish to express to you my appreciation of what you are doing, especially for the face brick manufacturers of the country, and to urge the necessity of the brick manufacturers getting together.

"The season, now drawing to a close, has been a busy one for the face brick manufacturers. The demand has been heavy. There have been two great drawbacks to the year's business, namely, scarcity of cars and labor. In some regions the scarcity of cars has been so great that shipments have been cut down almost one-third.

"I am glad to note there is visible, for the first time in many years, a tendency on the part of manufacturers to increase the price of face brick. For many years the tendency of prices has been downward, many manufacturers endeavoring to make up the increased cost of manufacture and the decrease in price by increasing the

output of their plants and skimping on repairs. The results have been that for some years many face brick manufacturers have been straining every nerve to make both ends meet, while others have been forced into bankruptcy.

"I know of no other line of business of the same importance as the face brick industry wherein there is as little co-operation and unity as there is in the brick manufacturing business. The result of this policy of 'every man for himself' is well demonstrated by the great number of failures throughout the country.

"Brick manufacturers are paying from 30 to 50 per cent higher wages and from 20 to 30 per cent more for factory supplies than they paid ten years ago, and yet in many instances are selling their product at lower prices. Coal operators, lumber dealers, steel manufacturers, etc., have all increased prices many times in the last few years, and it would seem that the face brick manufacturers are about the only 'nerveless aggregation' that can be found among the big business interests of the country. The price for high class building brick is too low, and has been too low for years. An increase of even \$1.00 per thousand on face brick would be a Godsend to many manufacturers, and this increase could go into effect without disturbing building operations in the least. It is time that all the manufacturers should begin to get some profit rather than give it to the speculative builders or the brick jobber. In times past it has not been an uncom-

PAST SEASON BROUGHT HEAVY SALES IN CLAY PRODUCTS

mon thing for brick jobbers to sell face brick at a profit of \$4 to \$5 per thousand, when, in many instances, the manufacturer was not receiving, in reality, five cents per thousand profit.

"The outlook for the coming season for brick manufacturers looks good at the present time. The stocks of brick on the yards of factories are smaller than they have been for many years. However, it is a little too early to prophesy, but let us all hope that the coming season may be profitable, and all join hands in boosting clay products as the best building material."

Clyde C. Murray, President, Reynoldsville Brick & Tile Co., Reynoldsville, Pa.—"Some changes have taken place in the organization of this company during the past year. In early August, Mr. A. O'Donnel, who served this company as president for nearly ten years, died. Ira S. Smith, director of the company for several years, and during the past three years vice-president of the company, disposed of his holdings. These changes necessitated a re-organization of our board of directors. When the writer, who has for the past six years acted as secretary and manager, succeeded to the presidency, H. N. Widdowson, cashier of The Mahaffey National Bank, Mahaffey, Pa., was elected vice-president, Margaret C. Stoke, for several years in charge of the accounting department, succeeded the writer as secretary. Henry Herpel continues to retain his office as treasurer of the company.

"We have found 1912 a very fair year in the building brick trade. Common brick have maintained a higher price during this year than we have known at any time since the organization of our company ten years ago. The face brick prices have not changed materially either for better or worse. The principal market for our face brick has been New York State, and the Eastern cities of our country. Perhaps Washington, D. C., has been our best single market, our rough textured red brick in the rich variation of shades being very popular in that city. Western New York State has not only taken care of a large volume of face brick, but has absorbed more than two and one-half millions of our wire cut paving block. This has not been a good year from a manufacturing standpoint, and at the close of the year we are nearly one-half million short of the total brick manufactured in 1911. To overcome this shortage in manufacture we have been compelled to purchase from other manufacturers about two million brick. The Good Roads movement is bound to bring paving brick more and more to the front.

"As to the outlook for 1913, the writer has just returned from an extended trip throughout the eastern territory and New York State. The present indications are that a large volume of face brick will be consumed during 1913,

PREDICTS GREAT TRADE IN PAVING BRICK IN 1913



"The outlook for paving brick in 1913 is very much in excess of any previous outlook with which the writer has had any experience."

CLYDE C. MURRAY, president of Reynoldsville Brick & Tile Co., Reynoldsville, Pa.

the demand running particularly to rough textured brick, and we are sorry to say the preference being given to light color brick. Some of the best men that we interviewed at that time seem very confident that this demand will not continue and that by the close of the year the red brick demand will be at least on a par and probably much in excess of the light shades.

"The outlook for paving brick in 1913 is very much in excess of any previous outlook with which the writer has had any experience. We have unfilled orders on file at the present time that will aggregate more than one million eight hundred thousand brick. Most of this is for State Highway work in New York State, and for city streets in Rochester and other New York State cities. At the present time we have under consideration contracts, and the refusal of sufficient number of orders to take care of all the brick that we will be able to manufacture during the coming year."

Read—Ponder—Digest—Act.

W. E. Dinwoody, President Standard Brick Co., Macon, Ga.—"We are about to close the most successful year we have ever experienced. Our trade has been, good, and

prices such as to permit us to realize a legitimate profit on our investment. Our Southland is fast coming into its own, though we have hardly 'scratched' the surface of our development. However, it is being facilitated and hastened by assistance from some of our friends in the North, who became interested in the opportunities presented by the South, and having investigated both land and people, have cast their lots with us in large enterprises.

"Notable among these should be mentioned the Central Georgia Power Co. and its allied interests: The Macon Gas Co., the Macon Railway & Light Co., and the Central Georgia Transmission Co.

"These enterprises have been made possible by that splendid firm, A. B. Leach & Co., whose offices are located in a number of the principal cities of the United States.

"Their hydro-electrical development of approximately 20,000 horsepower on the Ocmulgee river near Macon, has proven a boon not only to the brick manufacturers of Macon, but to all other manufacturers and citizens at large. The securities of these companies have proven fine investments, as the companies are well and efficiently officered, and are on a splendid paying basis. Electrical power for brick plants is very much to be desired, as it is simple, convenient and economical.

"Notwithstanding that this was a presidential year, which some are accustomed to consider an unusually poor year for business, our business has been all we could desire, and with the growing prosperity in the South we look forward to a prosperous year.

PAVING BRICK MANUFACTURERS FIND PROSPECTS GLOWING

"We are expecting a good year in 1913, but we deplore the lack of co-operation among our fellow brick-makers. Take for instance the Building Brick Association of America, whose very organization was an inspiration of vast benefit to me. We are not supporting it as we should, yet as one of its oldest members, I can truthfully say that that organization has been of incalculable benefit to my company, and that it will work the same good to any one else who will identify himself with it.

"Of course, every brickmaker, whether a member or not, is benefited by the work of the Building Brick Association, but he cannot get its full benefit without being a member, and the additional direct benefit that will accrue to every man or company who joins, will be far more in **dollars and cents** than the amount of the dues.

"Benighted Brickmakers, why will ye not buy (membership)?"

"Fiske, your secretary, 'asks you why.

"Lack of co-operation is losing us business. Let's get together. There is too much of the spirit of,

"'Every man for himself and the devil for the hindmost one.'

"In the multitude of counsel there is wisdom.'

"The members of the Building Brick Association, and they are numerous, say to you, Mr. Individual Brickmaker, that your membership in the Building Brick Association would be of immense financial benefit to you. Now do you take the position that you alone, and on the outside, know more than the many, who are on the inside, and have tried it—Or do you say they are intentionally endeavoring to mislead you?

"Well, if you think that, let me ask you why should they mislead you? They can get no benefits from the association which you would not enjoy to the fullest if you were a member; which membership would cost you very little. It is only by getting on the inside and helping that you secure the most benefit from the Association.

"Now, Mr. Brickmaker, either they are telling you the truth and you are denying yourself a great benefit, or they are misleading and are consequently a set of lunatics for trying to operate an organization at an expense to themselves of both money and time, which is doing no one any good.

"These are the two attitudes, one of which the members of the Building Brick Association must occupy. Now let's see where you stand:

"You either believe that without any effort to inform yourself, your wisdom is more than that of the combined membership and, therefore, the Building Brick Association is a set of lunatics—or you know the Building Brick Association is doing good, and doing you good, and you are unwilling to pay your part, for fear of benefitting

BOOSTS ASSOCIATION WORK AS AID TO CLAY WORKERS



"Paving brick manufacturers generally have enjoyed a favorable year and this is particularly true among members of the National Paving Brick Association."

CHAS. J. DECKMAN, Vice-President and Secretary of the Deckman-Duty Brick Company, Cleveland, Ohio.

some one else to a greater or less extent, notwithstanding that the increased benefit that you will receive will be more in dollars and cents than your membership will cost. Will you not think it over and decide, and act according to the true results of your deliberations.

"Intelligent, unselfish co-operation means more for the brick manufacturers than any other one thing, and is absolutely necessary. If we continue to let one kind of building material after another take from us our legitimate channels of trade and occupy our markets to the prohibition of brick construction, we will be like the nation that permits the denuding of its forests and plants.

"We must fight for our own. All the world loves a fighter, and despises a non-combatant, who lies supinely and permits his enemies to despoil him of what is his, by right of tradition, by right of inheritance, and by his inalienable right as a free-born American citizen.—Read! Ponder! Digest—then Act."

"Wait for the Cow to Back Up."

Chas. J. Deckman, V.-Pres. and Sec. The Deckman-Duty Brick Co., Cleveland, Ohio.—"The present universal conditions of the paving brick industry, as it appears to the

writer, are decidedly favorable. From observation and information, I infer that the manufacturers have enjoyed a fairly successful season, and I believe this to be especially true of those who are members of the National Paving Brick Manufacturers' Association, who have had and have taken advantage of the association literature and advertising.

"This condition may not apply to each particular member of the association, but where it does and has not, it has been largely the fault of these members, in common with other manufacturers, in not promoting their own interests for the **use of brick for street improvements**, without regard to personal or selfish interests, as against other types of paving material, depending entirely on the development of the business by the efforts of the association or a natural demand without personal effort. In other words, they 'sit down in the meadow and wait for the cow to back up to be milked' instead of going after the cow. It would serve them right if the cow decided not to come home at all.

"The chief difficulty with the industry is that there are a large number of manufacturers who are not affiliated with the N. P. B. M. A., but who are reaping an indirect benefit from the efforts of that association without giving any support in return for it. I am at a loss to understand the position maintained by this class of manufacturers, but I feel that all such are not progressive and not alive to their best interests and the interests of the industry, and, by neglecting to join the association and helping to pull the load of publicity and advertising

CLAY WORKERS SING VERY HOPEFUL TUNE IN LETTERS

campaign, are by their blood-sucking attitude, giving strength to the opposing types of paving material by weakening our efforts to build up the industry as a universal proposition. It is gratifying to know that a number of such manufacturers have recently become members, and that others have expressed a willingness and desire to do so at an early date, and, with the membership of practically all an assured fact, the public will soon be aware of the fact that there is no type of paving material produced that can show the quality, durability and cheapness of brick paved roadways.

"The prospects for 1913 are much brighter than for the season of 1912 just closing. The experience in the East, especially that of New York State, in the large expenditure of money for the various types of macadam and treated road pavements that are now costing about 25% of the original cost for maintenance, annually, has in itself caused a demand for the highest grade of road improvement that can be obtained, and authoritative investigation has determined that vitrified paving brick is the best artificial product in existence for the paving of streets and roadways."

Coast Manufacturers Stand Shoulder to Shoulder.

W. W. Dennis, Manager, McNear Brick Agency, San Francisco, Cal.—"The San Francisco brick market during the year of 1912 has been the steadiest of any year since the rush after the great fire. The price of \$7.50 per thousand f. o. b. cars or wharf has been well maintained from Jan. 1st up to the present date.

"The demand has been disappointing, as we all looked for a very active market for at least six months of the year. This rush did not materialize, but the manufacturers, more than eager to sell, stood shoulder to shoulder and maintained one price throughout the year without any organization or binding obligation.

"Every manufacturer expressed a willingness to pile his surplus rather than force his sales, fearing that to cut the price would so discourage his associates that it would be impossible to put the price up again.

"We have proven to ourselves that an equal price has a tendency to justly divide the sales in about the proportion of a factory's output. We are all going into the new year with more brick than usual with a secure feeling that 1913 will see activity enough to create temporary shortage to warrant our asking \$8 for brick in the spring of 1913; which is none too much on the coast, considering the large size and the high standard of quality demanded by the trade in this market.

"Our great trial was first to demonstrate to ourselves for one year that we could maintain an even and fair price without resorting to periodical wars on one another.

SAYS YEAR HAS BEEN FAVORABLE ONE IN TRADE



"The year has been a favorable one and 1913 promises to be still better for the Clayworker. It looks like a new era for burned clay."

W. S. DICKEY, of the Dickey Clay Manufacturing Co., Kansas City, Mo.

This we have done and the desire on every manufacturer's part to make a little money in a much abused and badly conducted industry seems to grow stronger each month, and the feeling of get together and keep together, working for the industry as a whole seems to have taken hold of all of us.

"We have a luncheon every month or two and grievances are aired and we keep in such close touch that no opportunity is afforded for the breeding of distrust and selfishness on account of lack of contact with one another.

"We are all subscribers to an organization called the 'Brick Builders' Bureau,' which is working to elevate the clay industry. This bureau is in charge of Nat. Ellery, ex-State Engineer of California, and its board of directors meet every week to discuss with him the plans for the best interest of our business by trying in a dignified and legitimate way to increase brick consumption. Other associations in this bureau with the Rough Brick Men are the Terra Cotta and Face Brick Manufacturers, the Local Steel Erectors' Association, the Masons and Builders' Association—all interested in brick and steel and fireproof

building, as against concrete building, as advocated so ably by reinforced steel bar manufacturers, in conjunction with the cement industry. The Great Exposition and the completion of the Panama Canal will surely create the activity, that we anticipated a little too soon, this year.

"The millions in work planned by the municipality, state and exposition company must materialize in the early part of 1913, and we can clearly see three prosperous years ahead in our clay industry, particularly so if the spirit of brotherhood between men in the same field continues to thrive under favorable conditions, as it has during the past year under less encouraging conditions."

Outlook Certainly Fine.

The Alliance Clay Product Co., Alliance, Ohio.—"The last year's business with us, individually, has been the best in our existence. We have been quite successful in developing our speedway paving block, and we think that there is no better way for the manufacturers to do effective advertising than to develop his own product to the highest point. We are located in the center of the paving block industries and all the factories surrounding us seem to have plenty of business, and the outlook for the coming season is certainly fine. In our own county of Stark, Ohio, the legislation is under way for some 25 to 30 miles of country road pavement for the coming season. We noticed in the Sunday Cleveland Plain Dealer that Gov.-Elect Cox is advocating that the state go into the manufacture of paving brick, using convict labor. We do

(Continued on page 59.)



THE "Get-Together" spirit among clay-workers never was more strongly manifested than during 1912. The various associations received large additions to memberships, state associations, idle for years, were revived and local organizations were perfected in the war to create a demand for burned clay.

This increased interest in organization work, while coming late in the year, as it did, extended back sufficiently to show what can be expected during 1913, and the plans for the new year give every indication there never has been such a united effort to boost clay products as will be made in the next twelve months.

The aggressive editorial campaign waged by "Brick and Clay Record," had much to do with this revived interest in association work, of course, but there was no one thing that stirred the latent energies of the clayworker more than the published reports from the United States Geological Survey, which showed that concrete and lumber had made wonderful advances during 1911 and that clay had fallen off more than seven million dollars during the same period. The reports for 1912 seem however to show a decided advance over 1911.

This journal presented these facts in as forcible a manner as possible. Some of our friends criticised "Brick

SHOW AND CONVENTION DATES IN CLAY PRODUCT FIELD

CLAY PRODUCTS EXPOSITION CO.—Coliseum, Chicago, February 28-March 8. F. L. Hopley, Secretary, 815 Chamber of Commerce Building, Chicago.

NATIONAL BRICK MANUFACTURERS' ASSOCIATION—Chicago, March 2-8, during the Second Annual Clay Show. Headquarters at the Congress Hotel. T. A. Randall, Indianapolis, Ind., secretary.

BUILDING BRICK ASSOCIATION OF AMERICA—Chicago, March 5-6, during the Second Annual Clay Show. Headquarters at the Congress Hotel. J. P. B. Fiske, secretary, Flatiron Building, New York.

AMERICAN CERAMIC SOCIETY—Washington, D. C. February 25-28. Prof. Edward Orton, secretary, Columbus, Ohio.

NATIONAL PAVING BRICK ASSOCIATION—Chicago, March 3-4, during the Second Annual Clay Show. Headquarters, Congress Hotel. Will P. Blair, secretary, Engineers Building, Cleveland, Ohio.

AMERICAN FACE BRICK ASSOCIATION—Chicago, during the Second Annual Clay Show, March 3-7. W. H. Hoagland, Hartman Building, Columbus, Ohio, secretary.

ILLINOIS CLAYWORKERS' ASSOCIATION—Champaign, Ill., January 9-11, at the State University and to adjourn to Chicago during the Second Annual Clay Show. A. E. Huckins, secretary, Champaign, Ill.

IOWA BRICK AND TILE ASSOCIATION—Des Moines Ia., January 22-23. Adjourns from there to Second Annual Clay Show in Chicago. C. B. Platt, secretary, Van Meter, Ia.

WISCONSIN CLAYWORKERS' ASSOCIATION—Milwaukee, Wis., January 29-31, to adjourn to Second Annual Clay Show in Chicago. Prof. Samuel Weidman, secretary, Milwaukee, Wis.

NATIONAL CLAY MACHINERY ASSOCIATION—Chicago, March 4-5, during the Second Annual Clay Show at the Congress Hotel. W. N. Durbin, secretary, Anderson, Ind.

CANADIAN CLAY PRODUCTS ASSOCIATION—Toronto, Ont., January 14-17, at the Prince George Hotel. To adjourn to Second Annual Clay Show in Chicago. D. O. McKinnon, secretary, 32 Colborne street, Toronto.

and Clay Record" for speaking too plainly." The great majority, however, realized for the first time what was being done to supplant burned clay from the secondary position it already occupied, and began to take an interest in what the associations were saying.

The last few months of the year found ready listeners among the clay workers to the appeals for membership made by the various organizations that have been formed to promote the industry. Much is yet to be done but the indications at the beginning of 1913 give promise of a most active work among the various associations.

While great importance must be attached to the preparations for the active participation by the American Face Brick Association in the work of the new year, and an equal recognition must be given the reorganization of some of the old state organizations, the most promising results are to be expected from the various local organizations throughout the country.

The very backbone of organization work depends upon the local organizations and the notable achievements of such organizations as the Dallas, (Tex.) Clay Products Bureau, the Builders Bureau of San Francisco, the Ohio Face Brick Association of Cleveland and the Chicago Face Brick Association,

must be reckoned as among the most practical efforts made during the year just closed.

Much depends upon the local clay products manufacturers. If they are organized and are found to be working in harmony, with one common cause in view—the creation of demand, the greater organization work of the larger national and state bodies will be made that much the easier.

In the following pages an attempt is made to review the work of the National and State associations in more detail. Because little space is given to some of the associations does not necessarily mean that little was accomplished by these bodies. The close of the year is a very poor time to get a clayworker to do anything except make brick and this journal experienced considerable difficulty in getting the secretaries of the various associations to take sufficient time to supply data for a complete review.

N. B. M. A. IN 1912

Review of the Work of the Parent Body of Clayworkers

The parent organization among the clayworkers, of course, is the National Brick Manufacturers' Association, of which C. A. Bloomfield, of Indianapolis, Ind., is the secretary. Metuchen, N. J., is the president and Theodore A. Randall,

This body, while not organized primarily to interest itself in the selling end of the manufactured clay products, does give a fatherly protection to anything that will aid its members, and is therefore alive to whatever will boost burned clay.

Organized chiefly for the purpose of exchanging ideas in manufacture, the annual sessions of the N. B. M. A. are looked forward to with considerable interest by the members. This year, as last year, the association will meet in Chicago during the Second Annual Clay Show. The precedent established years ago that no one city have two consecutive sessions was broken because of a desire to give whatever encouragement to the Exposition this action might lend.

At the session in Chicago in March of 1912 there was considerable discussion on the subject of publicity work and a special committee was appointed to make a careful investigation with the idea of inaugurating some sort of centralized work during the year. The plans were never formulated but it is understood that at the next annual session held in Chicago, March 2-8, the subject will be revived and that a deeper consideration will be given it. It is clearly evident that publicity is the greatest need in the clay field.

The N. B. M. A. is a most valuable organization to the clayworker and as the membership fee is very small

it does seem that every one interested in the industry should be an active member.

There are nearly 10,000 clayworkers in the United States, and every one of this great number should be a member of the association. While it may be that many of this number will find it impractical to attend every annual convention, they should give the work of the N. B. M. A. their endorsement by sending the membership fee of \$2 to the secretary and at least be with the active participants in spirit if not in fact.

The program of the coming convention has not been issued for public distribution, but an unusually strong one is being prepared and the papers that will be read will be of great aid to those that will be fortunate enough to hear them, as speakers who are considered and recognized as authorities on the subjects they discuss, will be on the program.

The officials of the association the past year have proven a most aggressive set of men and their labors, purely unselfish because they were those of patriotism for the industry they represent, have brought the reward of many substantial achievements in the work of the N. B. M. A. The officers, however, can accomplish little without the hearty co-operation and assistance of clay workers.



C. A. Bloomfield, President of the N. B. M. A.

THE N. P. B. M. A. IN 1912

Achieves Much in Vigorous Campaign During the Year

One of the most aggressive work among the clay associations during the year just closed was that of the National Paving Brick Association. This body mapped out a very strenuous year for itself and while it was not successful in every one of its plans—particularly in getting the \$500,000,000 good roads amendment to the Ohio state constitution adopted, it did a great work in many other directions.

More miles of brick highways and city streets were paved with vitrified brick than in any previous year and this notable achievement may be attributed very largely to the efforts of Secretary Will P. Blair, his able assistant, H. H. McDonald and the executive board of the association.

More than \$60,000 was raised during the year from a comparatively small membership for publicity and campaign work and every dollar of this was spent most judiciously.

Secretary Blair and Assistant Secretary McDonald were kept on the jump during the past twelve months attend-

ing meetings, conventions and conferences. Lectures were given before mass meetings in many municipalities, addresses were delivered before various societies and road improvement bodies and a constant and persistent campaign was carried on with literature and correspondence in every section of the country.

Elaborate exhibits were taken to such places as the Million Dollar Pier Exposition at Atlantic City and the Indiana Good Roads Congress in Indianapolis.

More than 80,000 pieces of mail were sent out of the Cleveland office during the twelve months and a judicious advertising campaign was waged in the mediums that were expected to do vitrified brick the most good.

The year 1913 promises still greater things for the paving brick interests, even with the poor support given the N. P. B. M. A. With the proper encouragement from

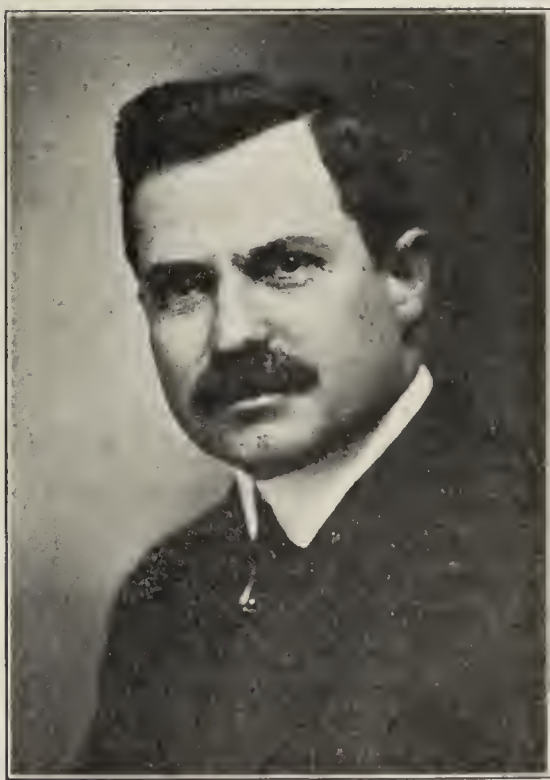
FOUR AGGRESSIVE ASSOCIATION MEN



and has been productive of most satisfactory results.

It is a fact, however, not easily understood and quite lamentable, that very few of the paving-brick manufacturers east of the Ohio state line, south of the Ohio river and west of the Mississippi river, are members of this national association of paving-brick manufacturers and this must be due to a non-appreciation of and a lack of knowledge, on the part of these outsiders, regarding its mission and work. Such is its importance to every individual manufacturer in the paving-brick industry, that no one who is thoroughly interested in the extension of the use of brick pavements can afford to neglect the singular advantages of membership in this organization.

The association has for its object, the general good of all manufacturers and the extension of the industry generally and it is urged that all manufacturers of paving



These four men are active heads of as many associations enlisted in the battle to make burned clay supreme. Will P. Blair, secretary of the N. P. B. M. A. is the gentleman at the top. On the left at the bottom is J. M. Adams, president of the American Face Brick Association. In the center is R. L. Queisser, secretary of the Ohio Face Brick Association, and to the right, W. P. Varney of the Chicago Face Brick Association.

all paving brick manufacturers the association will make the year of 1913 the banner one.

The great success of 1912 should prove to the manufacturer the value of affiliating with the association work. It is not enough that you take a membership and pay your dues but you should also become an active factor in the work.

This association was organized in 1905. Its special mission was to bring before the public, municipal engineers, city officials and contractors, the special merits of brick pavements and their superiority for civic purposes over any other paving material. An aggressive warfare has been carried on for this purpose by the association

brick, not yet members, will realize their own individual responsibility in this matter and commence the new year by taking membership in this association.

THE B. B. A. ACTIVE IN 1912

Conducts Aggressive Campaign and Does Much to
Make Brick Makers Prosperous

The Brick Builders' Association of America was an active element in the production of business for the face

brick and the common brick manufacturers during the year. Organized scarcely three years this aggressive body of brickmakers has fought an unceasing battle for burned clay.

A consistent programme of publicity was followed during 1912 and, while hampered for funds, as all the clay associations are, the B. B. A. did considerable educational work.

Very little advertising was done in the popular magazines or the daily press, but the limited resources of the association were turned to the distribution of literature and a considerable number of the little books and pamphlets issued were placed where they would do the most good.

Despite the equitable manner in which funds for the use of the association are raised the brickmakers of the nation have been very slow to respond until the last few months of the year. The brickmakers, like all other clayworkers, were aroused somewhat to their duty by the campaign waged by "Brick and Clay Record" and many enrolled their names in the work. There remains, however, a large list of non-members who should be active participants in the affairs of the B. B. A. and there is hope that a persistent effort to awaken them during the next few months will bring fruitful results.

The association is divided into two sections—the face brick and the common brick manufacturers. The face brick makers are subdivided into four classes. Class A is composed of those manufacturers who make more than 20,000,000 brick per year. This class is assessed \$250. Class B is composed of those manufacturers who make from 10,000,000 to 20,000,000 brick per year. They are asked to pay \$150 per year. Class C takes in those manufacturing from 5,000,000 to 10,000,000 brick per year. Their assessment is \$75. Class D is composed of manufacturers whose annual output is less than \$5,000,000 brick annually. Their assessment is \$50.

The common brick makers are divided into five classes. Those making more than 50,000,000 brick annually are asked to pay \$250 and are put in Class A. The Class B manufacturers are those that make from 25,000,000 to 50,000,000 brick. Their assessment is \$150. Class C takes in those that have an annual output of 10,000,000 to 25,000,000 brick and the assessment is \$75. The Class D fellows are those that make from 5,000,000 to 10,000,000 brick annually and the assessment is \$50. Class E is composed of those manufacturers who make only 5,000,000 brick annually or less. The assessment is \$25.

It can be seen from these classifications that the B. B. A. has so arranged its assessments that the smallest man-

ufacturer can become an active member and enjoy the benefits of the association on an equal basis with the largest.

The work of the association during the past year, as mentioned above, covered chiefly the distribution of literature, although the regular bulletins issued and mailed each subscriber weekly are not to be ignored. The bulletins give the names and addresses of persons who have inquired about some of the literature issued by the association and who have shown an interest in brick as a

material for building purposes. The last bulletin issued, for instance, has the names and addresses of a score of interested prospective builders.

The books now published by the association and which are given to each member at cost are as follows:

A House of Brick for Ten Thousand Dollars.

A House of Brick at Moderate Cost.

One Hundred Bungalows.

A Revolution in Building Materials.

The Cost of a House.

Are You Planning to Build?

Two Books of House Designs.

J. Parker B. Fiske is the secretary and treasurer of the association and has been since its organization. His office is located in the Flat Iron Building, New York, and it is from this place most of the active work of the association is done. Ralph Simpkins, of St. Louis, is the president of the association and also takes a decided interest



J. Parker B. Fiske, Secretary of the Building Brick Association of America.

in the work.

There are no salaries connected with the association, those in charge giving their services purely from a desire to benefit the brickmakers as a whole.

It is more than probable, however, that a salaried employee will direct the affairs of the association in 1913, as Mr. Fiske finds the duties of the association have grown to such a magnitude that he says he cannot do the association justice and attend to his own affairs. If Mr. Fiske is contemplating a resignation it is to be regretted, for he has taken such an active interest in the association work and is so thoroughly acquainted with its details that his executive ability will be greatly missed.

Mr. Fiske was asked to write something on the work of the B. B. A. and he sends the following letter:

I am in receipt of a request for a letter giving my opinion as to the general subject of brick publicity, together with what has been accomplished by the Building Brick Association—what we might have done if we had the support of the brickmakers and such other thoughts as bear on this subject.

I am pleased to write you such a letter.

The American brickmaker leads the world with his product—with its mechanical and artistic perfection. As a

business man he is distinctly inferior to other manufacturers and merchants in modern America.

Brickmaking was a crude art until the American mechanic applied his wonderful genius and brought forth machinery and processes of drying and burning which compared favorably with those of any other art. Here, however, the brick manufacturer has stopped.

Apparent, he has been so busy with his pug mills and his dryers, and his kilns, that he has not had the time to take a broad view of the business world. Thus he has left to take care of itself the great function of selling which is equally important in any business as the function of manufacture. With his feet in the clay-pit and his day-dreams of the perfect brick or the perfect kiln, he has not had time to climb up on the top of the bank and see what the world was doing—to see an A. T. Stewart or a Marshall Field revolutionizing the dry goods business, or a Simmons creating an immense hardware business from the nucleus of little shops, or a Montgomery Ward building up a mail-order business, whose volume and importance almost staggers the imagination.

A better day is beginning to dawn for the brickmaker, however. He is learning that to create a real business comparable with those about him, he must adopt modern methods for merchandising his wares.

The brickmaker has at last awakened to the fact that he must advertise.

Five years ago brick advertising was almost unheard of, except possibly in the clayworking papers where it did not reach the public. Today it is increasing with wonderful strides. Within the last year, dozens of manufacturers have sought out the editor of their local paper with the story of brick.

Instead of contenting himself with a small card in the advertising columns, the brickmaker has taken large space in which he has told briefly and forcibly the merits of his wares.

Five years ago, there was born in Columbus, Ohio, a publicity association. Like many youngsters, it has had a struggle for existence. It has had the "indigestion of conservatism," the "colic of petty jealousy," the "fever of enthusiasm" followed by the "chill of cold feet."

But, notwithstanding all these ills, it has continued to grow until it is now reaching maturity where it is ready to enter into a career of untold usefulness.

The Building Brick Association of America is now ready to go to work for you, Mr. Brickmaker, if you will give your assent.

It has been through the experimental stage and has arrived at a point of exact knowledge as to what can be done.

It has the support of the big, broad-minded, progressive manufacturers of the country.

It is well organized.

It is thoroughly equipped for doing business.

Its literature has been perfected to a point of efficiency for winning converts to brick not equalled by any literature ever published in connection with the building business.

Its literature is artistic and forcible. It has only to be read to carry conviction; but it is of no value to the brick manufacturer stored on the shelves of this Association. It ought to be out in the world doing business.

If you have a corps of the livest, most up-to-date salesmen, would you have them sit in the office or at home because the firm will not pay their traveling expenses?

It is an equally foolish state of affairs that owing to lack of a small insignificant sum the wonderfully silent salesmen of this Association must stay dormant in the office.

It is now up to you, Mr. Brickman, to pay the traveling expenses—to furnish the money to send these sales-

CERAMIC SOCIETY REPORT

Organization is Composed of Men of International
Reputation Who Make Researches of
Great Value

The American Ceramic Society is composed of those interested in the technical side of the industry and among the members are the names of men who have gained international reputation in ceramic matters.

The officers of this association are:

President, Arthur M. Watts, Bureau of Mines, Washington, D. C., now located at Columbus, O.

Vice-President, C. W. Parmelee, Director, Ceramic Department, Rutgers State College, New Brunswick, N. J.

Secretary, Prof. Edward Orton, Jr., Director of Ceramic Department, O. S. U., Columbus, O.

Treasurer, Ellis Lovejoy, of the Richardson-Lovejoy Engineering Co., Columbus, O.

The Board of Trustees consists of the officers and includes William Cannon, Syracuse, N. Y.; J. Parker B. Fiske, New York City; Harold P. Humphrey, Trenton, N. J.

The published reports of this body of learned men are looked upon as the most valuable literature in the clay industry as the papers read at the annual meet-

ings are printed in full and cover a great variety of subjects as related to the manufacturing end.

The last volume, fourteen in the series printed since 1899, only recently was issued and contains seventy papers and 888 pages, making not only a very large book but a most comprehensive one. Vol. 14, as is its predecessors, is illustrated with drawings, photographs and color plates.

"The Transactions of the American Ceramic Society," as the books are called, are printed for the benefit of the members and a copy is given to each without extra charge. However, the Society does not intend to deprive non-members of the advantage of its researches and offers a limited quantity to those who desire them. The paper bound report is sent to anyone postpaid for \$5.50. The cloth-bound book costs \$6.25. These figures practically represent the cost of the books.

The Society does not meet this year with the other clay associations, having decided to hold its annual session at Washington, D. C., February 25-29. However, it is possible an adjournment will be taken to Chicago during the Clay Show.

A. F. B. A. PLANS FOR 1913

New Organization Devoted to Face Brick Prepares
for Active Campaign This Year

The American Face Brick Association really is an outgrowth of the Ohio Face Brick Association and the



C. B. Platt, Secretary of Iowa Brick & Tile Association.

various city associations which devote their attention to the promotion of the fancy building brick. It was organized last year at the convention of the N. B. M. A. and the Clay Show but has taken no active interest during 1912, contenting itself with getting into shape for an aggressive campaign during 1913.

J. M. Adams, general manager of the Ironclay Brick Company of Columbus, Ohio, is the president of the new association and W. H. Hoagland of the Claycraft Brick Company of Columbus is the secretary and treasurer.

In forming the A. F. B. A. it was emphasized that the new organization was not to conflict in any way with the B. B. A. The latter organization takes in both branches of the brickmakers and devotes itself to a general publicity movement.

MACHINERY MEN

N. C. M. A. Meets With Clay Association During Big Clay Show

The National Clay Machinery Association, as its name indicates, is an organization devoted exclusively to the interests of the men that manufacture clay machinery.

This organization seeks to work in harmony with the clay products manufacturers' associations and meets every year with the others.

Primarily the Association was organized to obtain better freight rates for its members and otherwise improve the market conditions. It takes an active interest, however, in the affairs of the clayworkers, lending its aid and support wherever necessary, because its interest is closely weaved with that of the clayworkers.

W. N. Durbin of the Anderson Foundry and Machine Works, of Anderson, Ind., is the secretary. The next scheduled meeting is March 4 and 5 in Chicago during the Clay Show.

I. C. P. B. FIGHTS FOR SEWER

Activity of Concrete Men Stirs Western Manufacturers to Organize for Battle

The Western Clay Products Publicity Bureau, or as it is now known, the International Clay Products Bureau, was one of the active associations in 1912. This association was organized in 1909 and marked the consolidation of the earlier individual and unrelated efforts of several of the Western manufacturers.

The original interest of this association was vitrified sewer pipe but in 1912 there was a desire shown to include the drain tile people and probably 1913 will find a closer tie between these two branches of the industry.

The inspiration for the formation of the Bureau followed the letting of a \$300,000 contract for sewer pipe by the city of Fort Smith, Ark., to the concrete interests. It took just such a jolt as this to awaken the self-satisfied,

well-contented, over-confident vitrified pipe manufacturers to the realization that there was an active, aggressive competitive element in the concrete manufacturer.

In the three years that the association has been at work it has accomplished work that is little short of a miracle and there is no better example of the value of organized effort than that accomplished by this association.

In no other section of the country had concrete secured a firmer hold than in the West. However, with the persistent publicity work done by this Bureau and the numerous failures of concrete, vitrified sewer pipe has regained its place at the head and bids fair to stay there.

G. H. Tefft of the W. S. Dickey Clay Manufacturing Company of Kansas City, Mo., is the secretary of the Bureau and to him much of the credit of the great work accomplished must be attributed.

Mr. Tefft is a most aggressive campaigner and does not let any grass grow under his feet. Much of his work is accomplished by distribution of pamphlets, although some advertising has been carried in the daily press.

For the coming season a vigorous campaign has been planned and the members of the Bureau figure on having a most prosperous year. The work is to be broader in scope and it is possible that the field will be widened to include the entire country.



Jno. S. Ringle, Pres., Wisconsin Clay Mnfrs. Assn., Wausau, Wis.

STATE ASSOCIATION WORK

Minor Organization Do Great Good and Create Demand for Burned Clay Products

There are several state associations, each of which is doing a great good to the clayworkers of their commonwealths. The most active among these is the Ohio Face Brick Association, the Ohio Tile and Clayworkers' Association, the Illinois Clayworkers Association, the Iowa Brick and Tile Association, the Wisconsin Clayworkers Association, the New York Association and the Northwestern Clay Association.

The Ohio Face Brick Association is the most prominent among those mentioned because of the great work it has accomplished. R. L. Queisser of Cleveland, is the secretary and F. H. Chapin the president. The headquarters of the association are in Cleveland.

Aside from the great good accomplished by this body in obtaining better freight rates and shipping conditions there has been a most aggressive campaign conducted along publicity lines the past year and this association has been used as a good example by many of the other associations in planning their own campaigns for the coming year.

In Cleveland the association has done more to make it a city of brick than any one agency. Columbus, Dayton and other cities of the larger class have been greatly benefited by the work of this organization and every city and town in the commonwealth has felt its influence.

The Ohio Tile and Clayworkers' Association was only recently reorganized at Columbus, Ohio, and is a revival of the old state association which was merged with the

Ohio Face Brick Association years ago. George B. Drennan, of Plymouth, Ohio, is the secretary and the work planned by this body for the coming year promises well for its members.

The Illinois Clayworkers' Association has, in the main, devoted its attention to the manufacturing end, but the programme for the approaching state meeting at Champaign, January 9-11, indicates that the selling end will receive material support during the coming year. A. E. Huckins of Champaign is the secretary.

This association took no active interest last year in the Clay Show but is working towards the preparation of an exhibit that will not only be a credit to the state of Illinois but also to the clay industry as a whole.

One of the subjects of vital interest to be discussed at the convention to be held in Champaign later in the month will be the Workmen's Compensation Act. The new law is in effect and there seems to be considerable difference of opinion among the employers as to its effect on them. In the programme which has been prepared a liberal time allotment will be given to this discussion. Of all the published programmes of the Clayworkers' Association that of the Illinois association is the only one to reach this office. It follows:

Thursday Morning, Jan. 9th.

At 9:00 a. m.

Prayer—Rev. Chas. Ryan Adams, Pastor First Presbyterian Church, Champaign.

Welcome Address—President E. J. James, University of Illinois. Response and President's Address—F. W. Butterworth, Danville, Ill.

Reports of Standing Committees.

Appointment of Committees.

1. "Creating Demand"—Iverson C. Wells (Managing Editor, Brick and Clay Record).
2. Some Characteristics of Illinois Coal and Their Bearing Upon the Purchase Price—Prof. S. W. Parr (Dept. Chemical Engineering, U. of I.).
3. The Behavior of Clays in Burning—R. K. Hursh (Ceramics Department, U. of I.).

Thursday Afternoon,

At 1:00 p. m.

4. Method of Making Rough Faced Brick and Colors—R. T. Stull (Ceramics Department, U. of I.).
5. (Subject announced later)—A. V. Bleininger (Bureau of Standards, Pittsburgh, Pa.).
6. A Few Pointers on How to Make a Success of the Brick Business—John T. Hummert (Gem City Press Brick Co., Quincy, Ill.).
7. "Testing of Shale and Clay from Illinois Coal Mines."—F. W. DeWolf (Director State Geological Survey, Urbana, Ill.).
8. Heat Losses in Kilns and Furnaces—R. K. Hursh, Urbana, Ill.

Friday Morning, Jan. 10,

At 9:00 a. m.

9. Burning of Paving Brick—B. S. Radcliffe, Urbana, Ill.
10. Practical Cost Systems—D. C. Haeger (Illinois Shale Tile Co., Aurora, Ill.).
11. Our National Fire Waste, Causes, and Remedy—C. J. Doyle (Ex-State Fire Marshal), National Board of Fire Underwriters, Chicago, Ill.
12. Problems Confronted in Manufacture of Brick and Hollow Ware—A. E. Williams, Danville, Ill.

Friday Afternoon, Jan. 10.

At 1:30 p. m.

This session will be held in the new kiln house at the University of Illinois. Take car marked (New & John) going to Urbana. Get off at Goodwin Avenue and go south to Ceramics building.

13. Progress of the Ceramics Department of the University of Illinois.—R. T. Stull.
14. Advantages of Technical Training to Clay Workers and Benefits of the Industrial Course—A. V. Bleininger, Clay Section, Bureau of Standards, Pittsburgh, Pa.
15. The Illinois Cooperative Mining Investigation—S. O. Andros, Department of Mining Engineering, University of Illinois.

Inspection of Ceramics Department.

Banquet.

Banquet will be held at the Beardsley Hotel, Friday evening.

Saturday Morning, Jan. 11.

At 9:00 a. m.

16. Drainage Congress and its Accomplishments—Frank B. Knight, Chicago, Ill.
17. Brick for the Hard Roads Movement—W. T. Blackburn, C. E., Paris, Ill.
18. Face Brick and Their Manufacture—Douglas Stevens, Acme Brick Co., Cayuga, Ind.

Reports of Committee.

Appointment of Standing Committees.

Reports of Secretary and Treasurer.

Election and Installation of Officers.

Adjournment.

Following the convention programme a two-weeks' course in ceramics is to be given by the Ceramic Department of the State University, beginning January 13 and lasting until January 25. No fees are charged.

The Iowa Brick and Tile Association, with C. B. Platt the secretary, is one of the liveliest of the state bodies. This Association recognizes the importance of educational work as a means of creating a demand and conducted a vigorous campaign during 1912. Many of the older state organizations would do well to study the work accomplished by the Iowa fellows. The next convention will be held at Des Moines, Iowa, January 22-23.

The Wisconsin Clayworkers' Association meets this year at Milwaukee January 29-31. Prof. Samuel Weidman is the secretary. This association, like the Illinois organization, confines its work to the manufacturing end chiefly, but the programme for this year includes a consideration of the selling end.

The New York, the Louisiana and other state bodies have shown more activity of late than for several years and there is every indication that they will take a still more active interest in the affairs of the clayworkers in their localities during 1913 than in any previous year.

CITY ASSOCIATIONS' WORK

**Local Organization Show Considerable Activity
During Year Closed**

It is only within the last year that active interest was manifested in the city association work among the clayworkers. The success of such excellent organizations as the Cleveland brickmakers and dealers and the Chicago Face Brick Association has inspired other cities to follow with publicity work and 1913 will find still more lined up for aggressive campaigns.

Dallas, Texas, furnished one of the notable examples of the past year. The brickmakers and dealers in that city organized to promote the interests of burned clay and conducted a most successful advertising campaign in the local papers. The members are very enthusiastic over the work in 1912 and it is safe to say that 1913 will find them more actively engaged in the boosting of brick for building purposes.

Evansville, Ind., was another recruit to the local publicity work and the advertisements that have appeared in the local papers were not only a credit to those that were responsible for them, but were most productive.

Macon, Ga., Los Angeles, Cal., San Francisco, Cal., Sheridan, Wyo., and Denver, Colo., were other live communities during 1912.

The Chicago Face Brick Association waged a most successful campaign during the year and the plans for 1913 contemplate probably the most aggressive war ever waged in a single community for brick.

The Cleveland Face Brick Association, really a part of the Ohio State Association, was the most persistent during 1912 of any local body. Large advertisements were carried in the city papers and other advertising mediums and the liberal use of burned clay in the building construction of Cleveland is a proof of the value of publicity as a means of creating a demand.

The local clay associations are the nucleus of the greater and more national publicity work and should be encouraged and fostered in every practical manner.

INDUSTRIAL COURSE IN CERAMICS.

Excellent Opportunity for Practical Workers at the Illinois University, Jan. 13-25.



THE Ceramics Department of the University of Illinois is desirous of co-operating with the clay and allied industries in as effective manner as possible. It is already providing a technical education for young men who expect to make ceramics their life work. Up to the present time, owing to lack of facilities and space, it has been impossible to attempt any educational work for the benefit of those actively engaged in the industries who have not the time nor the preparation required for academic studies. The gratifying support of this work by the Illinois legislature has resulted in increasing the space occupied by the department, and hence it is now possible to extend the scope of the work.

It is proposed to carry on, this winter, from January 13 to 25, 1913, at the University a course intended for practical men engaged in the work in any capacity, such as managers, superintendents, foremen or burners. In this short course the endeavor will be made to bring out the principles underlying the manufacture of clay products. A common school education will suffice for the requirements of the course. No fees are required. The work will be informal and carried out in the spirit of mutual co-operation.

Outside of the regular teaching staff, Prof. A. V. Bleininger of the National Bureau of Standards, Pittsburgh, Pa., and Ellis Lovejoy, E. M., of Columbus, Ohio, have engaged to assist in the work.

Owing to the fact that citizens of Illinois will be given preference, since the University is supported by the State, all applications from persons residing in other states will be considered in the order of the date on which they are received. It is suggested therefore that all applications be sent in as soon as possible. Several application blanks will be sent upon request to any manager or superintendent desiring to interest his foreman, burners and others.

Outline of Work.

The outline of the work is given in the program as follows:

The chemistry of clays in vitrification and fusion.—Prof. A. V. Bleininger.

Ceramic Physics. Specific gravity, porosity, heat units, specific heat, latent heat, temperature measurement and pyrometry, melting point, conductivity, softening point, barometry, humidity, etc., Laboratory work.—Prof. A. V. Bleininger.

Ceramics, Classification of Clays. The origin and classes of clays.—Prof. C. W. Rolfe.

Properties of Clays. Plasticity, bonding power, drying shrinkage, loss of water on drying, dehydration, hardening, vitrification, color, viscosity, fusion. Laboratory work: Testing for lime, iron oxide, soluble sulphates, carbon; classification of clays, drying tests, shrinkage measurement, color, comparison, specific gravity.—Prof. A. V. Bleininger.

Winning and Preparation of Clays. Quarrying methods, haulage, grinding, pugging, washing, filter, pressing, etc.—Prof. R. T. Stull.

Shaping of Clays. Auger machine, construction and design of dies, repressing, dry pressing, hand pressing in wood, metal and plaster molds, jiggering and casting. Laboratory work in sketching dies and plant layout.—Prof. R. T. Stull.

Drying. Principles of drying. The tunnel dryer, heated by waste heat, steam, radiated heat and direct firing. Operation and control.—Prof. A. V. Bleininger.

Burning. Heat generation, heat transmission, heat losses, the gases as heat carriers, types of furnaces, gas producers, watersmoking, dehydration, oxidation, vitrification, effect of oxidation and reduction, flashing, rate of burning, rate of cooling. Laboratory work in firing by pyrometers, by cones, by draw trials and studying the effect of oxidation and reduction by means of gas analysis.—Prof. A. V. Bleininger.

Control of Burning. Kiln records and methods of controlling kiln conditions.—Mr. B. S. Radcliffe.

Kilns and Kiln Construction. The construction of furnaces and of the different types of kilns, up draft, square and round down draft, semi-continuous and continuous kilns. The tunnel kiln.—Mr. Ellis Lovejoy, Columbus, Ohio.

Stacks and Drafts. Explanation of the function of stacks and of draft measurement.—Ralph K. Hursh.

Quality of Clay Products. Color, absorption, hardness, resistance to freezing, crushing and transverse strength, resistance to abrasion, resistance to chemical agencies.—Prof. A. V. Bleininger.

Slips and Glazes, and Methods of Decoration. Lead glazes, bright and matt, Bristol glazes, enamels, fritted glazes, porcelain glazes, salt glazing. Body colors, slip and glaze colors, underglaze and overglaze colors.—Prof. R. T. Stull.

Drafting and Reading of Drawings. A brief outline of the rudiments of drawing and reading of mechanical drawings with suggestions for the study of the subject.—Ralph K. Hursh.

SWEDEN SENDS REPRESENTATIVE TO U. S.

G. W'son Cronquist Comes to Study American Methods of Manufacture and Salesmanship.

G. W'son Cronquist, secretary of the Swedish Clay-workers' Association and general manager of one of the largest brick plants in the country, was a Chicago visitor recently. He is on a tour of the clay plants of the country as a special representative of the Swedish government, being sent here by the Royal Board of Trade of Stockholm to study the manufacturing methods employed and particularly the methods of salesmanship.

Mr. Cronquist spent several days in Chicago and was deeply interested in the association work as advocated by "Brick and Clay Record."

"I am a regular subscriber to your journal," he said in an interview, "and I am deeply impressed with the work you are doing. I am especially interested in your association work and believe your editorials on the subject of 'Get-Together' are the most valuable articles I have had the pleasure to read. I might say that your campaign was partially responsible for my trip to the United States."

Mr. Cronquist is visiting every important city in the United States and before he returns will have attended every convention possible, visited the larger clay plants, the state universities where ceramics are taught, and consulted with heads of the active clay associations. He plans to be back this way later in the month to attend the Illinois State Convention at Champaign and also will make it a point to be present at the Second Annual Clay Show in February.

Mantel and Tile Dealers Convention.

Arrangements are being made for a rousing meeting of the Interstate Mantel & Tile Dealers' Association of the United States, which will convene at the Hotel Pontchartrain, Detroit, Mich., Tuesday, February 11th, continuing in session Wednesday and Thursday, February 12 and 13, 1913. Every dealer should make it his business to plan his affairs so as to attend this convention. An interesting program has been planned and various entertainments planned will make the meeting pleasurable as well as profitable.

RHYMES SELL TILE.

Ohio Tilemaker Creates Local Demand Among Farmers by Cultivating the Muses.

Oh ye farmers, for many a mile,
Drain your farms with Red Burnt Tile;
They have always been in perfect style,
And will carry the water well worth while.

Your fathers used tile made of Red Burnt Clay,
Because they knew that it would pay;
They also knew that the tile would stay,
And still be there when they passed away.

The rain fell hard, the summer was wet,
Those without Red Clay Tile began to fret;
Cultivation was needed powerfully bad,
Farmers without Red Clay Tile were most awful sad.

But the farmer who had drained with Red Clay Tile,
Tended his crops with a big, broad smile;
His crops grew well, the weeds grew not,
Because to drain his land he had not forgot.

I will tell you where you can get the style,
That will drain your land and make you smile;
The Columbus Grove Brick and Tile Co. will sell you the tile,
That will drain your land and make farming worth while.

INTERESTING TALES TOLD IN CLAY

Brick, Unearthed at Nineveh, Reveal Romances and History of 1,000 Years Ago—
First Love Letter a "Baked" One of Indestructible Clay

By WALTER E. ROYSE



RICK—a crude specimen of burned clay of the Twentieth Century—is shown wedded to romance in Babylon ruins, products of a day 4,000 years ago. Gimil-Marduk wrote the love letter shown on this page—wrote it with a stylus in cuneiform characters upon a tiny oblong of moist clay—to his sweetheart, Bibeyeh.

When the stout-hearted young swain wrote these words and baked this billet-doux of mud in his private kiln, where he was accustomed to "cook his correspondence," he did not dream that it would be read by an alien people, on an undiscovered continent, 4,000 years hence.

Brick, however, as is universally known, is practically indestructible and just the other day Gimil-Marduk's original "baked love letter" was read by Dr. F. C. Eiselen,

original "baked love letter" was read by Dr. F. C. Eiselen, professor of Old Testament interpretation, in the course of a lecture on "The Recovery of a Lost Civilization" before the students of the Garrett Biblical Institute at Northwestern University, Evanston, Ill.

Tens of thousands of brick inscribed with cuneiform characters have been found upon the sites of Nineveh and Babylon, but among them all, this message that Gimil-Marduk wrote to Bibeyeh 4,000 years ago is the only love letter. Who will say that this little brick lyric, this love sonnet of baked mud, is not the most interesting document, humanly speaking, that has come down from that far-off time? It is, as it were, the voice of love making itself heard across the gulf of forty centuries.

In addition to this cuneiform romance, Professor Eiselen read inscriptions on other bricks, setting forth: Marriage contracts of Babylon and Nineveh, contracts relating to alimony, a complaint from a lodger in a boarding house against the fare, and business and official records concerning the daily life of these an-

cient people who wrote unwittingly for coming generations.

The brick were unearthed by the German Oriental Society, now making extensive excavations on the sites of Nineveh, Babylon and Asshur, which antedated Nineveh as the capital of the Assyrian empire.

The Northwestern University recently obtained six of these brick. They vary in size. The largest are three inches long, two inches wide and one-half inch thick. The official records are kiln-baked. Most of the private correspondence is on sun-

dried brick. The private letters were first written on moist clay and were inclosed in an envelope of clay, upon which was inscribed the address. The envelope, in turn, was baked.

When the person to whom it was addressed received it, he (or she) "cracked" the envelope and read the letter.

he (or she) "cracked" the envelope and read the letter.

A man just separated from his wife binds himself to support her, as is shown in an alimony brick that bears the date 552 B. C. It reads:

Na'id-Marduk, son of Shamash-balatsuiqbi, will give, of his own free will, to Ramua, his wife, and Arad-Bunini his son per day four qa of food three qa of drink; per year, fifteen manas of goods, one pi of sesame, one pi of salt, which is at the store house. Na'id-Marduk will not increase it. In case she flees to Nergal, the flight shall not annul it. (Done) at the office of Mushezib-Marduk, priest of Sippar.

Professor Eiselen explained that a qa was about two quarts; a mana, 900 grams, and a pi, seventy-two quarts. "Fifteen manas of goods" he thinks means material for clothes for the divorced wife and her son.

A marriage contract dated 2200 B. C., by which a man takes a slave to wife, reads:

Rimum, son of Shamk-hatum, has taken as a wife and spouse, Bash-tum, the daughter of Belizunu, the priestess of Shamash,



daughter of Uzibitum. Her bridal present shall be * * * shekels of money. When she receives it she shall be free. If Bashtum to Rimum, her husband, shall say, "Thou art not my husband," they shall strangle her and cast her into the river. But if Rimum to Bashtum, his wife, shall say, "Thou art not my wife," he shall pay ten shekels of money as her alimony. They swore by Shamash-Marduk, their King, Shamshu-ilu-na and Sippar.

The most pathetic brick deciphered by Professor Eiselen is the solidified wall of an ancient Babylonian, who lived in a boarding house—possibly in a hall bedroom. The letter to his father, in which he incloses money, beseeches the old gentleman to send him some fresh fish and other food. "Where I live," he writes his father, "there is no food I am able to eat." His letter:

To my father, from Zimri-Eramma: May the gods Shamash and Marduk keep thee alive forever. May all go well with thee. I write thee to inquire after thy health. Please let me know how it goes with thee. I am stationed at Dur-Sin, on the canal Bitimsikirim. Where I live there is no food I am able to eat. Here is the third part of a shekel which I have sealed up and forward unto thee. Send me for this money fresh fish and other food.

Here are some of the Babylonian proverbs deciphered from the bricks:

He that says, "O that I might take revenge and even add to it more" is like a man who draws water from a well in which there is no water and rubs his skin without anointing it.

The enemy will not be scattered in front of the gate of them whose weapons are not strong.

With disease that cannot be cured and hunger that

cannot be stilled, a coffer of silver and a trunk full of gold are not able to restore health or to still hunger.

If I consume all my garlic when the wind blows, my heart will be troubled when the rainy season sets in.

A drunken man has the strength of a worm.

The life of yesterday—it is every day the same.

Thou art so offensive that when thou goest into the river the water becomes foul, and when thou goest into the garden the fruit becomes bitter.

When the seed corn is not good, germs will not sprout and grain will not grow.

Because I must die I will eat; because I must live I will work.

Strife you find among the servants, gossip among barbers.

A servant in a strange town may be taken for a high officer.

Enter into friendship the very first day and thou dost thereby deliver thyself into everlasting servitude.

The ox of an enemy shall eat weeds; one's own ox shall live in fat pasture.

The liberality of the King insures the liberality of the magnate; the benevolence of the King insures the benevolence of the Governor.

Some of the bricks show that slaves sold in Babylon and Assyria for ten shekels of silver, which is equivalent to \$6. One brick, which records the sale of a slave mother and her unweaned child, says that nineteen shekels, or \$11.40, were paid for both. It is recorded on another brick that a man rented a house in Babylon in 2000 B. C.; paid one shekel of silver, or 60 cents, for a year's lease. A brick dated 2200 B. C. records a contract by which a man hires a son from a mother to labor for two and a half shekels a year, or \$1.25.

TERRA COTTA CONSTANTLY GAINING IN FAVOR



UCH has been written about modern architectural terra cotta but the subject is constantly enlarging, as new applications of the material are being made continuously.

Architectural terra cotta is coming into its own. It has achieved universal recognition for its qualities, as terra cotta and not as an imitation of some other material.

Architects design terra cotta fronts and strive for effects along the characteristic lines of the material. Formerly terra cotta was frequently called upon to masquerade as

When curtain walls are made of terra cotta in place of metal the attempt is no longer made to counterfeit metal but to preserve and emphasize in a non-corroding material



Terra Cotta Detail of Con. & Com. Bank Bldg., Chicago.



Terra Cotta for Con. & Com. Bank Bldg., Chicago, Made by N. Western Terra Cotta Co.

granite, stone, marble, cast iron, and whatnot and in doing so worked its way into the popular favor, so that now it stands for itself with no apologies to any other material. Generally speaking, if granite effects are desired in terra cotta, the possibilities of the material are made use of to produce such effects in more suitable colors and thus to "out-granite" the real material.

the agreeable softness and neutral tints afforded by the displaced material.

There is no other material so well adapted for exposure to weather. For exterior work it is without rival, its qualities remain intact through all the countless ramifications of color, enamels, glazes and the simpler standard wares.

In the Continental & Commercial Bank Building Chi-

cago, Ill., the student will find the true use of architectural terra cotta exemplified and brought up to date. It would be tedious and perhaps useless to attempt the analysis of all that has been done to produce this typical terra cotta front. To be appreciated the building itself should be studied. The terra cotta used in this building was the product of the well-known Northwestern Terra Cotta Co., Chicago, Ill., several of the details being reproduced herewith.

In looking over this building it should be remembered that this technical advance in the use of architectural terra cotta has been made in something like thirty years. In

thirty years, systems and organizations have been developed which make the material commercially possible. The achievement has resulted in the production of wonderful wares in short periods of time and at prices which people can afford to pay. The reward is a large industry the filling of long unfilled requirements and moderate financial gain.

Terra cotta requires too much skill in making, and goes through too many expensive processes to ever be a "cheap" material. Above all it successfully competes against other materials, less sightly and certainly less enduring, and aids materially in reducing fire hazards.

STRIKING EXAMPLE OF BRICK CHURCH CONSTRUCTION



NE of the most noteworthy of recent productions in ecclesiastic architecture is the new St. Joseph's Catholic Church, recently completed at Babylon, Long Island. It is of especial interest to "Brick and Clay Record's" readers on account of the lavish use of brick, both as a constructive and decorative material for the interior as well as the exterior decorative scheme.

While it is not a copy of any one particular church, the design, which is in the so-called Lombard style, which prevailed in the twelfth century in Northern Italy, suggests the architecture of St. Stephano at Bologna, one of the noted church edifices in Southern Europe.

The result of the architect's conception is one of the

great variety of colors, such as blues, greens, browns, yellows and reds formed in a kaleidoscopic manner so as to add brilliancy to the entire wall.

The interior of the church is an artist's dream, executed in vitrified brick in soft-blended tones, further decoration being afforded by the use of faience in the form of borders and circles in colors harmonizing perfectly with the brick work. A notable feature is the dome, executed in faience tile with a series of encircling windows and a richly designed border enclosing twelve panels representing given figures of the Bible. The simplicity of decoration is so marked in the general scheme as to verge almost on the austere, and yet sufficient color tone exists in the material to give a pleasing warm effect in addition to



St. Joseph's Church, Babylon, L. I. Recent Example of Use of Brick for Church Construction. Structure Designed in So-Called Lombard Style, Prevailing in the Twelfth Century in Northern Italy.

most remarkable and striking combinations of brick and tile work to be seen in America and is only another demonstration of the artistic results which may be attained by the use of burned clay building materials.

The brick used in the exterior construction of the building is of a rough hand mold, sand-finished variety, in various shades from medium reds to rich dark brown, purple and blackish tints, harmoniously blended so as to give the appearance of a rich old wall of oriental texture. Relieving the mass are decorations consisting of faience bands, borders and panels of glazed tile in a

the substantial appearance otherwise evident. In fact, both the inside and out show a skillful handling of materials and color.

The roof of the building is a bright salmon-colored tile, which contrasts beautifully with the rich oriental coloring of the brick and faience work of the interior. While the illustrations shown are unusually comprehensive, they fail to convey the richness of the general effect of the entire building, as they, of course, do not reproduce the color scheme which while brilliant, is pleasing and by no means overdone.



Remarkable interior view of St. Joseph's Church, Babylon, L. I., showing employment of brick throughout the general scheme. The Vitrified Brick in soft colors are marked off with Faience Tile, forming borders, harmonizing with the tone of the brick.

BOOSTING THE SELLING END

Story of Young Man's Experience in Climbing the Ladder of Success Contains Valuable Suggestions as to Handling Men—Delivery End Important

By B. F. COBB



If children could choose their parents, some people would be childless. For that reason, if no other, it is most likely better that our advent into this world is planned for us.

As far as I am concerned, I have no complaint to make on that score, for I had a kind and indulgent mother and a father who had consideration enough for me to give me reasons for what he told me to do. I don't mean by this that he always followed his commands with reasons, but if I asked for a reason there was one on the way as soon as I had finished asking. This gave me a certain kind of comradeship with my father, and as I grew older I came to look upon him as a very wise man.

When I was through with high school I had the first serious talk with my father about my future. Being a successful lawyer, he naturally desired me to follow in his footsteps, but when he found that my mind was set on a mercantile career he offered no objections and gave me to understand that he would assist me in every way he could.

Instead of taking a preparatory course for college, I took a nine months' business course, and when I was ready to go to work I had a fair knowledge of bookkeeping, understood quite a little about stenography and had acquired fair speed on the typewriter. I had decided upon only one thing: I wanted outdoor employment, but I realized that outdoor employment, without a smattering of a business education, would mean simply manual labor, and although I was not afraid of manual labor, I felt that I wanted the best there was.

Father said he would intercede for me with some of his clients, but I didn't favor this, and the bright look in his eyes, when I said it, proved to me that I was on the right track.

I have often wondered since if business men realize how little a young man, just out of school, who has never had a chance to learn by practical experience, whether lumber, for instance, is sold by the pound or by the yard, knows about business.

I am sure now that the average young man does not realize how ignorant he is, and I have my doubts as to whether the average proprietor does.

I tried to get work in every kind of business that I saw, and every night, after a hard day, father would ask me if I didn't want him to help me, or if I didn't think it was about time to strike out for a preparatory school. Pride came to me and I declined all offers of assistance.

Securing a Job.

Perhaps I would have been looking yet had it not happened that an ill wind blew Jerome Compton's hat into the mud. I rescued it, and in doing so went through mud

that came above my shoe tops. As I did so, he said, "That is too bad, boy, come into the office and clean your shoes." In a few moments I realized that Jerome Compton was at the head of Jerome Compton & Co., dealers in brick, lime, ceiling and several other commodities, sand, hair, ties that at that time I knew little about.

After I had cleaned my shoes and had gotten them to looking quite respectable Mr. Compton said, for about the twelfth time, that he was very sorry, and bor-

rowing an expression from my father, I said, "How sorry are you, Mr. Compton?"

"What do you mean, young man?"

"I mean just what I say; I am looking for work, and are you sorry enough for me to give me something to do?"

"What can you do?"

"I can do as much as any one who has just left school and has had no experience in any kind of business."

"You appear to be a bright lad. You ought to go to college."

"Did you go to college, Mr. Compton?"

"No, I was not able, but I have been sorry since that I could not."

"You are at the head of this concern, are you not, Mr. Compton?"



An Ill Wind Blew Jerome Compton's Hat Into the Mud and I Rescued It.

"I am, but what has that to do with it?"

"My father always told me to consider the source when any one gave me advice, and as you seem to have succeeded pretty well without a college education I don't think I want any of it in mine. At least, if you will give me a job."

The yard foreman had come in and was listening to our conversation.

"Can you use him, Dan?" said Mr. Compton, turning to the foreman.

"Sure I can use him. I'll have him back in school in two days."

But he didn't, although he put me to loading brick, rolling barrels of lime, storing away hair and a few other jobs that were anything but light work.

I worked under Dan for a month, and I give you my word I didn't need rocking to put me to sleep at night.

Taking the Stenographer's Place.

One day the stenographer didn't show up, and as I had been sent into the office for something just as Mr. Compton was calling for her, I offered to take his dictation for him. If he was surprised he didn't show it, but took it as a matter of course. I shall never forget the look on Dan's face when he came in hunting for me about a half hour after I had started in on my new job. I was sitting there in my overalls and jumper pounding away on the typewriter in a most approved style. Monday, when I received my pay envelope, I found \$15.00 instead of \$12.00.

"Henry," said Mr. Compton one morning, as I came into the office from loading a wagon, "why didn't you tell me you were a stenographer when you came here?"

"Because I wanted to learn the business, and father said I could not learn a business like this from the office. Besides, if I had tried stenography when I first came here, I would not have known a tile from a fire brick, and my letters would have been full of mistakes."

I never missed a chance to work in the yard when I was not needed in the office. I worked this way for six months, then the bill clerk left, and the bookkeeper, thinking to favor me, worked me into that job. This cut out most of my outside work, and as I had been making a study of what would assist the salesmen, I didn't like it.

Becomes Assistant Foreman.

When I had been a year at this work, and had kept my eyes open for advancement in all directions, I approached Mr. Compton with a proposition.

"Mr. Compton," said I, "I want to go back on the yard. Dority, the assistant foreman, is going to leave and I want his place. I think I can make myself more valuable to you on the yard than in the office."

"I don't see how you can make that out. Dority is only getting \$15.00, the same as you are, and you are in line for the bookkeeper's job if he should quit."

I don't expect to have to work very long as assistant foreman for \$15.00 a week. I propose to make myself worth more money to you in a very short time."

Mr. Compton looked at me in a queer way and said, "Perhaps you would like my job, you are so anxious to be advanced."

"Not just yet, Mr. Compton, but some time I hope to have as good a job or a better one."

Mr. Compton laughed. "You are a nerry kid, but tell me what your scheme is."

"My scheme is to make myself so valuable that you will feel that you must pay me more money, but it is not so much the money I am after as it is a better position with the company. I have a plan to assist the selling end of

the business, for it is the selling end that makes the wheels go around. The assistant foreman has charge of the teams, and when you are rushed with orders, as you are now, one of the drawbacks with the sales department is slow delivery."

"Oh, I see. You want more teams. Now Henry, I admire your enterprise, but let me tell you something. It is only at certain times of the year that we are rushed, and when we are rushed every one else is, and we cannot always hire extra teams, but the rush season is not long enough to justify buying more teams."

"I understand that part of it, Mr. Compton, but I don't want more teams; all I want is more work from the teams we have and a more satisfied lot of teamsters."

"You talk old for so young a kid, but you can try, and at the end of a month I will either pay you more money or fire you."

He Makes Good.

That was how I came to be assistant foreman. I had a plan and put it into operation at once. We had some extra wagons, and I put them into service. I planned my loading so that as fast as a team came in we changed wagons, and it kept the teams on the go all the time. As soon as I could catch up a little on the orders I held one team in to shift the wagons, hauling them out on the street as fast as they were loaded. All the teamsters had to do was to unhitch from one wagon and hitch to another.

This worked very well, and I helped the salesmen with more prompt deliveries. Then I studied up a new scheme. I rigged up a derrick, using two of the oldest running gears of the wagon to handle the loads in the yard. As each team came in it went direct to the derrick. The empty body was lifted off and the full one put on. I found I could shift these bodies quicker than the teamsters would unhitch and hitch onto another wagon, and before business slackened off I had horses standing in the stables and deliveries being made more promptly than ever before.

I didn't get fired, but received the raise, and good old Dan Summers, the foreman, not only didn't get jealous of me, but helped me in all of my schemes.

I found that in many cases the yard force did not work in perfect harmony with the selling force but I considered myself as much a salesman as any on the street, for through the salesmen I posted myself on the condition of every job that we were furnishing and I never permitted any contractor to wait for stock.

The salesmen realized that I was doing everything I could to help them. They were my friends, and we worked together. They gave me the condition of the jobs and I gave them the condition of the orders, and when a salesman promised anything in regard to delivery of stock I saw to it that his promises were fulfilled.

We did more business the first year I was assistant foreman than the company had ever done before and made more money. Of course I thought some of the credit belonged to me, but the only way Mr. Compton showed he was interested was to ask me if I was ready to take his job yet.

The real success for the salesmen of any concern would be advanced wonderfully if every one, from the water boy to the owner, worked only for the best interests of the company. This is an old idea and well known to every one, but in how many concerns is it carried out to the letter? The salesmen are looked to as the ones to keep the business machinery running, but bad management

(Continued on Page 72.)

DEVELOPMENTS IN BRICK ARCHITECTURE

Brick Renaissance--Result of Many Causes--Chief Among Which Is the Production of Multi-Colored Brick in Wonderful Varieties of Textures and Finishes

By GEORGE ETHELBERT WALSH



THE antiquity of brick as building material is of historical significance, and the revival of interest in them recalls some of the evolutions through which they passed in the earlier days. Nineveh was largely built of brick, and Egypt had her brick kilns, in which the children of Israel toiled and sweat. The Greeks were good brick-makers, but they failed to carry the art to the commercial success attained by the Romans.

Throughout Asia Minor, brick were largely employed for building purposes, and archaeologists have discovered that the far-famed palace of Croesus was constructed of brick. But the Roman architects not only used brick in the most satisfactory way, but they wrote the history of their country on them. Bricks often bore dates and in-

from England and Holland, as none were made in this country, and another cause of their neglect was the vast quantities of timber waiting for the builder to use. Our first houses were of the log cabin type, literally hewn out of the forest, and with the introduction of saw mills, plain undressed lumber was employed for construction purposes.

The few Colonial builders who used brick, brought from England and Holland as ballast in the holds of vessels, established a type of architecture here that was an echo of the Georgian period in England. Later, a few clay deposits were discovered and crude brick were manufactured for the first time in this country.

Originally, brick were moulded by hand in crude forms, and while of a unit size they were irregular in appear-



Unusually Attractive and Homelike Brick Apartment House of Mrs. H. Moorman, Cincinnati, O. Tietig & Lee, Architects.

scriptions. A brick bearing the date of 123 was found half a century ago, and on the shores of the Adriatic, at Pola and Zara, and in other towns of Istria and Dalmatia, a large number of brick have been found bearing the stamp of Rimini. Whether the ancients had brick moulds or whether they used movable type for these inscriptions is a matter of uncertainty today.

The Romans spread their history over the world in brick, and when they built the famous Roman wall around London they stamped their individuality on the British nation. England adopted brick as her building material from the first, and her history has been written in brick architecture as well as that of Rome. Holland and Germany were early users of brick and tile, and they brought their use almost to perfection.

In this country, brick did not appeal to either builders or architects for a good many years. One reason was that the brick, used in Colonial days, had to be imported

ance. This gave to them a rather artistic appearance when set in buildings. There was entirely lacking that mechanical accuracy of form which distinguished brick of a later period. Mechanical accuracy was obtained when machines and metal moulds were introduced. This enabled the manufacturers to turn out more of their products, and brick became so uniform in size that it was difficult to tell one from another.

Early Brick Too Monotonous in Color.

Not only that, but the Yankee brickmaker adopted one particular variety of clay for his work, and as a consequence, the brick were all of a flaring red, and the ambition of the makers seemed to be to secure perfect monotony of color and form. The red brick house was not a very ornamental structure, while it was striking to the eye, it was not artistic or ornamental. This monotony of color and form caused architects and builders to turn

more and more to wood, and so our country became a land of combustible frame houses.

In the modern renaissance of brick, the manufacturers have changed their methods entirely. Instead of producing only one or two sizes of brick, they manufacture today a great variety of shapes and sizes. But the modern popularity of brick is due as much to accident as any other cause. The standard brick of former times had to be perfect in shape, size and color, and this meant that brick burned too much or too little had to be thrown out. The over-burned brick were discarded and used to fill up holes and pits, as they were considered worthless in the trade.

Rough Brick First Used.

It was not until the late Stanford White took some of these over-burned brick and constructed an artistic chimneypiece of them that they were redeemed from their fate. The decorative effects of this chimneypiece immediately appealed to the artistic sense of all beholders. Instead of a glaring red brick structure, the chimney presented rich blues and violets, and dull purples and buffs. The surface, instead of being as smooth as machinery could make it, was rough and pitted in places where the overburning had destroyed some of the materials.

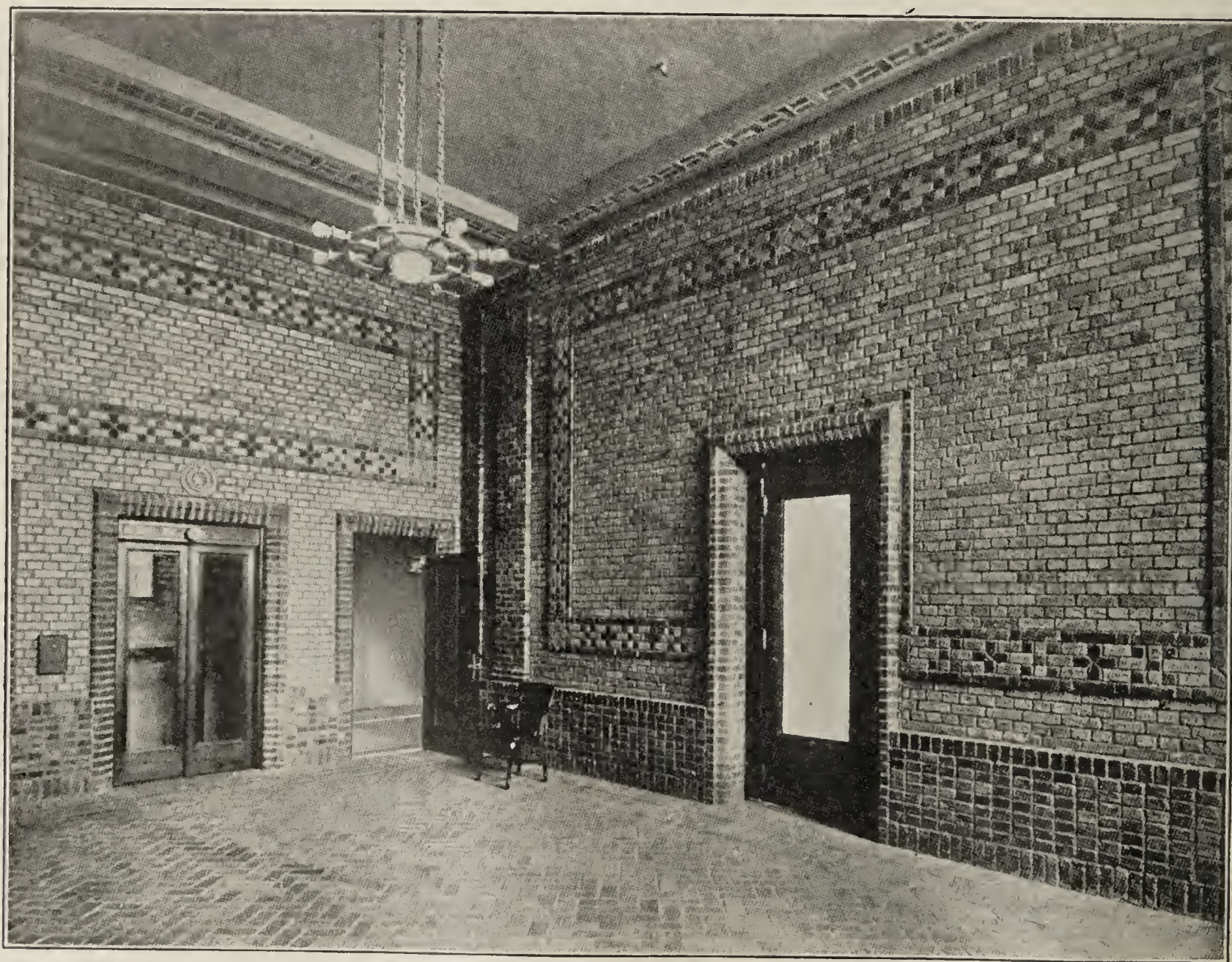
A little research then showed that the ancient brick-makers, who made everything by hand, had availed themselves of this overburning process. For ages it had been supposed that ancient brickmaking was a lost art. We could not obtain the rich colors of the ancients. But it

was no lost art, nor any secret. The ancients had simply overburned some of their brick, and instead of a uniform color they had beautiful greens, olives, reds and violets.

The so-called lost art was restored. The overburned brick were immediately made valuable, and architects specified them for special work. The brickmakers began to overburn their brick purposely as they realized that people wanted variety, and not uniformity in building materials. Rough texture brick were now made purposely, and were no longer cast aside as useless.

The next step in the process was to study the use of different colored clays. Instead of clinging to red clay, it was found that by using various clays most beautiful variegated shades could be obtained. So remarkably has this work progressed that, today, it is possible to make brick patterns almost as delicate and rich in color as a Persian rug. The colors run through the various shades of Indian red, copper, olive green, purple, browns and deep blues. Ivory colored brick are now made as easily as red brick, also golden browns, rich buffs, light grays, coffee shades, deep russets and tobacco browns. The palette of the artist is hardly richer in colors and shades than the brick which the modern architect has at his service. Intermediate shades are almost endless, and the surface texture varies from the bright glazed brick to rough finishes in many styles.

Architects are turning more and more to brick as a material with which to work, as they recognize more and more the artistic value of brick which appeals to builders on account of its substantiability as well as for its adaptability to various styles of architecture. By the selection of the right bricks, any pattern can be executed.



A Corner of Main Entrance of New Otis Elevator Building in New York City—Walls Faced with Famous "Tap-stry" Brick Made by Fiske & Co.

A further step in the brick renaissance is noted in the use of broad and prominent mortar joints. Contrast in the surface can by this means be further emphasized so that all monotony is broken up. The mortar joints are made to blend with the brick, and are of varying shades and colors. By the skillful selection of brick and mortar, the building can be constructed with perfect harmony of detail and with startling attractiveness.

Mortar Joints Furnish Contrast.

Brick, today, are made in a great number of sizes so that variation in surfaces can be obtained by changing the unit of construction. Decorative effects are further obtained by using a greater number of headers, or brick laid with the narrow end out, and the result is the apparent number of sizes and shapes is greatly multiplied. Weathered effects, so much desired by some, are obtained by the use of rough brick, and if proper mortar joints are used good imitations of old cathedrals and buildings are obtained.

The renaissance of brick has been the result of developments during the last dozen years. Prior to that time a house owner had little choice in the matter of color or size of brick. Strive as he would the architect could not get much change in houses built of brick. With the wonderful variety of brick now at his disposal, it is possible to create most artistic homes of a fireproof and durable character without great cost or difficulty in planning.

The artistic use of brick requires taste and skill. A mere jumbling of many colors in a surface does not constitute beauty. There may be fashions in brick, but no fashion is worthy of imitation unless it is based on good taste. We must build with brick as a painter makes his picture. Colors must harmonize and fit into the general scheme. The danger is that there may be a veritable riot of colors so that the effect is spoiled. One might just as well attempt to paint a house in half a dozen different colors as to use too many kinds and varieties of brick in one structure.

For the seashore, with its white, glaring sands; for the shaded country place, with its green trees and emerald lawn; for the substantial town or village home, for the city apartment or public building, brick are today adapted with rare discrimination. Towns and cities built of brick offer variety and contrast to suit all tastes. There is no lack of harmony, and variety is obtained at no sacrifice of purity of motive and coloring.

Freakish Designs to be Avoided.

Brick as now made, offer better fireproof qualities than ever before because they are burned harder and will disintegrate under high temperatures much less quickly than metal or many other materials. The same quality which makes them more fireproof enhances their durability. Weather and atmosphere affects them only slightly, and a home properly built of good brick will last for generations. Consequently, it is well to build soundly and artistically of brick, using as a motive in the color scheme, some design based upon the general principles of good taste. Freakish designs and color schemes of an ephemeral nature should not be perpetuated in brick. One may adopt passing fashions in painting one's house, for it can be changed as often as the seasons change, but the brick color scheme is made to last, and we must be careful to choose colors that please and that do not offend any of the principles of good taste.

These points cannot be too much emphasized in building homes of colored brick, for, as one might expect, brick buildings of monstrous ugliness and freakish design have been put up within the past dozen years, which demonstrate just how a good thing can be abused in the hands of the unthinking. But that is no argument against colored brick. In the hands of competent architects, many colored brick can be woven into surfaces that will harmonize with the surroundings, and prove to be a joy forever. The artist must know how to use his colors or he will spoil the best of pictures.



Recent Type of Apartment House Which Has Become Popular In Chicago Residence Districts. This One, at the Corner of Sheridan Rd. and Pengrove Ave., Is Faced with Brick Made by the Western Brick Co., Danville, Ill. The Tile Roof Adds an Attractive Finish to the Whole.

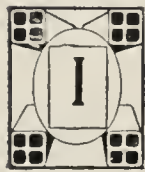
HOLLOW TILE MEN UP IN ARMS

Tests Already Made Show Clay Tile Deserve Better Treatment at Hands of Underwriters—Further Tests to be Arranged for by Interested Parties

Hollow block manufacturers all over the country are protesting against the unjust rating given the burned clay product by the insurance companies of the nation, as revealed in Mr. Grayar's article in the last issue of this journal.

There is a movement on foot to take definite action on the matter and probably a meeting will be called of all interested, the conference to be held in Chicago during the Clay Show in February.

By JOHN GRAYAR



Is Burned Clay Hollow Building Tile in the same class with concrete block? Are the Underwriters of America right when they refuse to give clay tile the same rating for insurance as they do brick and add the burden of 37½ cents additional premium as they do with concrete? Certainly not. And the clayworkers of the Nation seem to be a unit on it, judging from the numerous letters of protest that have poured into the office of "Brick and Clay Record" since the publication of the article by the writer in the December 15 issue of this journal.

It is true the Underwriters never made a test of clay hollow building tile and, for that reason, perhaps, may be justified in rating the burned clay product a little higher than brick, but the fact that tests HAVE been made and by municipal authorities should, at least, merit a temporary rating better than that given concrete, if not a rating consistent with the fire-resisting qualities of burned clay.

The city building department of Cleveland, Ohio, has made a test of hollow clay tile and finds that it is fire-proof and that it "can safely be used in the construction of load-bearing walls."

Similar tests have been made throughout the country at various times tests that were authoritative, and there never has been anything developed in these tests to warrant the placing of clay tile in the same class with concrete.

The most conclusive test made was that of the Cleveland authorities under the direction of Virgil G. Marani, city building inspector, assisted by a special committee appointed by the building department. This committee

was composed, in the main, of architects, former building inspectors, chiefs of fire departments from various Ohio cities and construction engineers.

The initiative for this new test was taken by the Cleveland Building Department and the announced purposes of the test were to "determine the strength, stability and fire-resisting qualities of hollow building tile," to quote Mr. Marani's own words.

Samples of tile for the tests were obtained from various sources with the idea of securing a wide range of quality. Some came from the yards of the manufacturers, others from buildings under construction.

In a special article which appeared in the "Construction News" of May 25, 1912, and in "Brick and Clay Record" about the same time, Mr. Marani describes the several tests made, the article is repeated in part as follows, as it serves to show just how hollow tile stand severe treatment:

For several years the building department of Cleveland, Ohio, has taken an active interest in the subject of the use of hollow clay tile in the construction of load-bearing walls. As a result, the conviction has been forced upon the department that the subject was worthy of careful and thorough investigation. In order

to secure all possible data relating to the subject, exhaustive tests were made, by the building department direct and also by competent engineers acting in harmony with the department, and in conjunction with one of its engineers, to determine the strength, stability, fire-resisting qualities, etc., of hollow building tile.

In the crushing tests, a large number of samples were gathered from different places; some from the yards of the manufacturers and some from the sites of buildings under process of erection. A complete range of quality



Photograph Showing Fire Test of Hollow Brick. One of the Committee is Shown Taking the Register of a Pyrometer. The Interior Face of the Wall Showed a Temperature of 2,000 Deg. F., While the Exterior Was Cold.

of tile was thus secured and tests made to determine absorption and crushing strength. All tile tested were first carefully measured and a complete detailed record kept of each tile throughout the entire test.

Some of the tile were built up into columns of different dimensions and with tile laid in different positions in the various columns and then tested for crushing strength; other tile were tested singly. From the results of these tests it was found that where the tile did not absorb more

ment with vertical webs in adjacent tile below and there must be mortar between tiles under the vertical webs.

The more the writer has studied the subject of building with hollow tile instead of common brick or wood, the more he has felt that it is a subject well worthy of careful investigation by engineers and architects, and that cities should avail themselves of the use of this valuable form of construction, by adopting specifications that properly prescribe its use. Cleveland architects as well as those in some other localities are recognizing that they can build tile residences, many of them stuccoed on their exterior practically as cheap as frame and that are enduring and fireproof.

The suggestions embodied in the above refer particularly to tile laid with voids horizontally. If it is desirable to use tile with voids vertically, a specification regulating this type of construction should be adopted in addition to the above specifications.

The above article, while giving Mr. Marani's conclusions as to the fire-resisting and load-bearing qualities of hollow clay tile, do not include the actual figures of the test. These are embodied in a report made a few days after the test was completed in January, 1911, the document being addressed to W. C. Denison of the Ohio Clay Com-

pany, manufacturer of the Denison Interlocking Hollow Block. The Denison company was particularly interested in the test, inasmuch as the future of the tile, so far as

than 12 per cent of their weight in moisture, with vertical webs spaced not more than four inches apart, center to center, and with web thickness at least 20 per cent of height and blocks placed so that the vertical webs occurred directly over each other, no single tile or columns failed under a less load than 3,645 pounds per square inch of vertical web section.

Under the authority vested in the inspector of buildings by the Cleveland building code, the writer ordered a fire test to be made to determine if hollow tile, erected as a wall supporting a heavy uniformly distributed load, would satisfactorily stand the fire test prescribed by the ordinance. A testing inclosure was built with 12-inch walls having outside dimensions of 9 feet 6 inches by 10 feet 3 inches by 8 feet 9 inches high, with a 3-inch coping of concrete on top. The entire top of the walls was loaded with an evenly distributed load of about 4,066 pounds per square foot.

The internal temperature developed was over 2,000 degrees F. at the upper pyrometer and 1,600 degrees F. at the lower; the outside wall surface remained cool throughout the entire test and showed no warping, settlement, or cracking of any kind. After the water had been turned on and the fire quenched, it was found that the inside plaster had been burned off but the inside face of the hollow tile was true and no apparent damage evident. Later the rear wall was further loaded to an evenly distributed load of 9,487 pounds per square foot, without showing evidence of crushing, cracking or disintegration of any sort.

After thus determining the properties of hollow tile from tests the next step taken by the department was the framing of a suitable specification regulating the safe use of these tile for load-bearing walls and the revision of the building code relative to the subject.

It is evident to the writer that hollow tile can be safely used in construction of load-bearing walls when proper specifications are followed. The specifications must treat them from the standpoint of their supporting webs and not as solid units. The tile must be hard burned. Vertical webs must be spaced not too far apart, and their thickness must be proportioned to their height. All vertical align-



Detail of Floor Construction, Showing Tile Placed Ready for Application of Concrete.



Hollow Tile Undergoing Load Test.

Cleveland was concerned, at least, depended on it. This is the report made over Mr. Marani's signature:

Mr. W. C. Denison,

The Ohio City Clay Company,

Dear Sir:

I herewith submit report on tests made by your Company for the City Building Department and ordered by me

under Section 356 and revised Ordinance No. 18968, Section 544 (a).

Test made on the afternoon of January 11, 1911.

To ascertain if the Denison Hollow Tile when erected as a wall under heavy uniformly distributed loading would stand the fire test specified under Ordinance 18968, Section 544 (a) of the Building Code.

The Building Department requested this test to be made with a loaded wall, and the Company therefore so conducted it.

The enclosure was built with the Denison Tile, laying up a 12 $\frac{1}{4}$ -inch wall with $\frac{1}{4}$ -inch of plaster (sand and lime) on the inside face. Beds and joists laid up with lime mortar with a little cement.

The testing enclosure was built of the following outside dimensions:—9' 6" x 10' 3" x 8' 9" high, with a 3-inch coping of concrete on the top.

At one end an opening was left into which the fuel was introduced; this opening was about 2' 6" x 2' 0" and closed with sheet iron when the test was conducted. Two pyrometers entered on a vertical center line of one of the sides, one at a point about 18 inches below the top of the concrete coping, and the lower pyrometer about 4' 8" from the same point.

The roof or covering was of No. 26 gauge sheet iron laid on steel rods, spaced 12 inches apart, the ends of which were bedded in about 12 inches of the concrete coping on top of the walls.

An opening was left in the center of this roof 36 x 36 inches and the edges secured. Provision by tunnel was made to secure effective draft for the fire while the test was being conducted.

The entire walls were loaded with pig iron at about 4,066 pounds per running or square foot; this iron was laid directly on top the three-inch concrete coping.

Time	Top Pyrometer Degrees Fahr.	Bottom Pyrometer Degrees Fahr.	Diff. of Time	of Temp. Variation Top and Bottom Degrees Fahr.
2:19 P. M.	Fire Started, opening closed.			
3:23 P. M.	825	425	4 Minutes	400
3:25 P. M.	1175	425	2 Minutes	750
3:26 P. M.	1225	475	1 Minute	750
3:28 P. M.	1350	600	2 Minutes	750
3:29 P. M.	1400	675	1 Minute	725
3:30 P. M.	1425	750	1 Minute	675
3:31 P. M.	1500	775	1 Minute	725
3:33 P. M.	1550	850	2 Minutes	700
3:35 P. M.	1625	900	2 Minutes	725
3:37 P. M.	1625	955	2 Minutes	670
3:39 P. M.	1650	1025	2 Minutes	625
3:40 P. M.	1700	1100	1 Minute	600
3:42 P. M.	1700	1200	2 Minutes	500
3:44 P. M.	1725	1240	2 Minutes	485
3:45 P. M.	1750	1275	1 Minute	475
3:47 P. M.	1760	1325	2 Minutes	435
3:50 P. M.	Top	1475	3 Minutes	
3:53 P. M.	Pyrometer	1500	3 Minutes	
3:56 P. M.	Out of	1525	3 Minutes	
4:02 P. M.	Order	1600	6 Minutes	
4:03 P. M.	Water turned on 15 feet distant and fire quenched.			

Hose 2 $\frac{1}{2}$ inches in diameter. Nozzle 1 $\frac{1}{4}$ inches tip.

The failure of the top pyrometer to record the last four readings did not in the minds of those present, at least detract from the efficiency of the test during the time of operation.

It was generally conceded that a temperature of over 2,000° Fahr. had been attained.

The outside wall surface did not even warm, but remained cool during the entire time of test, with no warping, settlement or cracking of any kind. Inside common plaster all burned off. Inside face of tile, true, and in no case was any damage evident. After punching a hole completely through the rear wall (where the water came in first contact) the entire tile sections were left absolutely undamaged.

The Committee appointed were:

Mr. W. S. Lougee, Architect, former Building Inspector.

Chas. Knox, Building Inspector, Youngstown, Ohio.

Victor Thebaud, Architect, Cleveland.

While the following gentlemen were present:

Virgil G. Marani, Building Inspector, Cleveland.

James P. Cross, Engineer of Construction, Department of Buildings.

E. A. Roberts, Secretary, Builders' Exchange.

Livingston Fewsmith, Architect.

W. C. Denison, The Ohio Clay Company.

George Denison, The Ohio Clay Company.

Bert J. Graham, The Ohio Clay Company.

James Stamberger, Chief of Police, East Cleveland.

W. H. Lawlor, Fire Chief, Youngstown, Ohio.

D. K. Moser, Fire Chief, Warren, Ohio.

Robert Mesner, Fire Chief, Canton, Ohio.

George Knofflock, Fire Chief, Mansfield, Ohio.

Arthur Aungst, Fire Chief, Alliance, Ohio.

T. J. McFarland, Fire Chief, Marion, Ohio.

E. C. Essex, Fire Chief, Lorain, Ohio.

The Pyrometer readings were taken by Mr. F. J. Frink of the Frink Pyrometer Company, with a Thermo Electric Pyrometer.

Mr. W. C. Denison, of the Ohio Clay Company, in a letter to the Building Department, dated January 17th, 1911, states that on January 11th, 1911, the rear wall upon which the test was made and through which the hole was made, was further loaded with pig iron to an evenly distributed load of 80,640 pounds, or about 9,487 pounds per running or square foot. There was no evidence of crushing, cracking, or disintegration of any sort.

This load test was witnessed by Architects W. S. Lougee and Theodore Schmitt of this City.

Respectfully submitted,

(Signed) VIRGIL MARANI,
Inspector of Buildings.

Accompanying the report made by Mr. Marani was one from the Osborn Engineering Company employed by the city to make the absorption and crushing tests. It follows:
Cleveland, Ohio, March 30, 1911.

To Whom it May Concern:

This is to certify that in November, 1908, at which time a revision of the Building Code of Cleveland, Ohio, relative to the use of hollow clay tiles for the construction of load-bearing walls, was under consideration, we were employed to make tests and report recommendations such as would properly prescribe their use.

We therefore, together with Mr. W. S. Lougee, who was Inspector of Buildings at that time, made exhaustive tests of tiles of various manufacture at the laboratories of the Case School of Applied Science.

First, to determine a proper specification for quality of tile, we submitted tiles of varying burn to the "absorption test," after which these tiles were crushed, and in this way deduced that tiles should not absorb more than 12 per cent of their weight in moisture. We then crushed single tiles, and tiles built in columns of different dimensions, and, with tiles laid in different positions, one with another, all of which is shown in the accompanying tabulated report of tests, designated "Tables A. and B." Our report, slightly revised at this date, embraces the following recommendations, to-wit:

Tile should not absorb more than 12 per cent of their weight in moisture. Vertical webs should be spaced not more than four (4) inches center to center, their thickness should be at least twenty (20) per cent of their height, and they should occur directly over vertical webs in the adjacent tile below. Tiles should be laid with broken joints and thoroughly bonded and all beds well filled with good mortar.

We found from the crushing tests that no single tile or column built in conformity with the above specifications, failed under a load of less than 3,465 pounds per square inch of available vertical web section. We, therefore, recommend the above specifications, providing walls so built are not loaded more than two hundred (200) pounds per square inch of effective vertical web section.

We also recommend, where joists are seated in walls of hollow block construction, that they should have a bearing extending over at least two of the vertical webs that occur directly over and in continuous alignment with corresponding vertical webs of tiles below. The thickness of such webs to be at least twenty (20) per cent of their height.

Respectfully submitted,

THE OSBORN ENGINEERING COMPANY,

(Signed) per Bernard L. Green.

(Signed) Myron B. Vorce,

Consulting Engineer.

I concurred in the above report, and the recommendations therein.

(Signed) Wm. S. Lougee,

Architect.

From the above reports it can be seen that the tests were about as exhaustive and thorough as could be made and the conclusions drawn therefrom do not warrant the excessive rates charged on hollow tile by the insurance companies of the nation.

SENDS BRICK BY MAIL.

Gary Manufacturer Takes Advantage of Parcels Post—Mails 1,000 Paving Brick.

William H. Fyffe Parry, a brick dealer of Gary, Ind., known as "Parry of Gary," startled the force of the Gary postoffice on Dec. 30, when two big dray wagons drove up to the postoffice and delivered 1,000 heavy paving brick.

The brick, which weighed 6,000 pounds, were wrapped and stamped and were to go out on the parcel post delivery January 1.

The postmaster and his chief clerk and the other clerks spent most of the afternoon carrying the brick into the parcel post's section. Parry was sending the brick out as samples.

Too Hot for Cement.

According to "Consular Reports" cement has not been a big success in French Somaliland, Africa, where a cement building was recently erected at a cost of approximately \$25,000. Shortly after its completion so many cracks appeared in the walls that the building has been regarded unsafe and now remains unoccupied. Native contractors are disposed to blame the intense heat and the moisture in the air and they are no longer enthusiastic on the subject of cement structures.

GREATER EFFICIENCY, 1913 WATCHWORD

A Few Reasons Why the Eastern Producer of Common Brick Will Need to Get All He Can Out of His Old Machine—What Some Are Doing Already

By ALLEN E. BEALS



HIS is meant to be a solar plexus to every brick producer in the East who supplies the New York Market. In the first place it will give some idea of what is coming to him if he does certain things and what he is very likely to miss if he commits certain sins of omission.

The East, if not the whole country, is going to have a big building year in 1913 and 1914. Instead of this statement being bounded north, east, south and west by superheated atmosphere, it is all hemstitched with facts, (they would be called concrete facts if this were anything else but a brick and clayworkers magazine.) But the facts are nevertheless real. Some brick interests in the East already have sensed them and have begun to act. Others are beginning to take notice, but there is a large company of complainers along the eastern sea board who are inclined to criticise those who strike a pace of progress and settle down to it some time before they themselves actually get going. Now here's where those fellows are going to be put wise at the very outset.

"Brick and Clay Record" has published facts and figures showing phenomenal engagements already made for 1913 by Eastern institutions specializing on loans for new building operations. The total on November 1 was \$239,000,000 or \$19,000,000 more than in any recent year. What is the significance of this in view of the fact that money has been tight in every other line of security since they began to move the big Western crops and the Balkan War began to drain the surplus cash from Wall street? It is this:

Water Shipments Reduce Freight Rates.

In 1915 the Panama canal will be completed. In the fall of next year the renovations and improvements to the Erie canal will also be finished. This means that a barge can go from New York 2,500 miles by water, right into the heart of the United States or almost as far west as Duluth, and the same barge, can trans-ship its cargo here at the North river docks and can send freight taken aboard at the far Western shores of Lake Superior and take it all the way around to any port on the Pacific at a rate much lower than the railroads can carry it even on slow freight from St. Paul to Oakland, California.

What does this mean to the Eastern clay products producer? It means two things. First that it will mean a bigger and still bigger demand for new buildings in the vicinity in and around New York, and secondly, it will open up to the clay products interests of the whole state of New York, the second largest clay producing state in the country, new markets having as a center distributing point, New York City.

This accounts for the remarkable size of the building engagements for next year in this district, when the year has not yet opened, and it also accounts for the tendency of mortgage lenders to get five per cent instead of four and a half per cent on their outstanding collateral, and the new rate of interest is practically assured at this writing.

But you who know New York conditions, may say that there has been a tremendous development of new fifteen, twenty and thirty-story commercial buildings in the mid town section and it will take another year for these to be

filled up. You will point to the new twenty-story Municipal building and say that this will drain the tenants of at least thirty six, seven and ten-story buildings in all parts of the city, where city departments are now scattered, and that a further drain upon already tenanted buildings will be created in May when the fifty-five-story Woolworth building opens its doors to prospective tenants. Then you may point to the thirty-two-story block-square Equitable building, the biggest building in the whole world, with thousands of offices to let and you will say that this will shut off all demand for new commercial space for some time to come.

But it will not. It will not begin to supply the demand. Edward J. Hogan, renting agent for the Woolworth building tells me he has his space more than sixty per cent taken already and a large part of this number is from western houses who, before the advent of the Panama canal and the rehabilitated Erie canal, never could do business in New York. These interests demand large office space and in addition they need show room and sample display accommodation. Whole floors of the Woolworth buildings are being taken by interests such as these, who are coming to New York to take hold of the opportunities for getting some of the country-wide business that the great Panama canal will open up and some of the trade that the Erie holds in store for the East and South.

Tendency to Concentrate in New York.

Up in the mid-town section of the city there is nowhere near enough room for the old established down town business houses which are establishing new districts. The erection of the Architect's building in Park avenue adjoining the building where the Greater New York Brick Company, the Empire Brick and Supply Company, and other big building material distributors, and contractors are already located, is going to create a big demand for new buildings designed for the use of architects, contractors and builders and it only serves to accentuate the tendency of all brick interests in New York City to concentrate the Grand Central Terminal zone, which runs from 28th street north to Forty-second street in Fourth and Park avenue and some of the side streets. It is believed that the Building Material Exchange itself, now way down town in Vesey street, will sooner or later move up to the new brick district.

Out of the old jobbing centers such as Green, Wooster, lower Broadway, Mercer and by streets of historic importance in former commercial years, is a great trade which is moving into new districts up town. The silk, dry goods, lace, furniture, fur, garment and other lines are centering in the 'Teens, 'Twenties and Thirties, from Fifth avenue east. Now the laundry interests are migrating and concentrating on the middle eastern section of New York in and around Twenty-third street all of which goes to show that there is still a big demand for new building construction which will call heavily for clay products.

But what is the brick producer going to do to take care of this demand for his products. The architectural terra cotta companies are very much alive to the situation. Some of the manufacturers of common brick are, but

they are in the minority. The Raritan river interests are very active and are prepared, by their modern equipment and modern, up-to-the-minute organization, to take advantage of the new conditions.

To prove that the North river interests are not alive to their opportunities, the writer recently circularized with stamped addressed return envelope enclosed, every brick manufacturer in the North river and Raritan river district, more than 150 of them. He received only fifteen letters in return and of this number only six could be considered as answering the questions asked.

This was the letter sent:

"I am desirous of ascertaining the opinion of leading manufacturers of common brick supplying New York market regarding the character of the 1912 season with special reference to whether selling conditions in the metropolitan district were good or not.

"Do you contemplate any improvements or extension to your plant or its equipment between now and the reopening of the 1913 season?

"Will you be kind enough to state what your machine equipment is and how many of them you used during the 1912 season and in 1911?"

The replies were as follows:

John B. Rose, Pres. Greater N. Y. Brick Co.:

"The season of 1912 began with promise of a large consumption of building material, and nothing but the failure of the steel companies to supply the trade with



Hon. Jno. B. Rose, President Greater New York Brick Co.

structural steel, in my opinion, has delayed the large demand which confronted us during the fall months.

"The inability of the steel companies and employers of labor generally, to obtain sufficient labor, has retarded developments and prevented the operation of fully 40 per cent of the machine capacity of the Hudson River Valley.

"From present indications there should be at least, 40 per cent more demand this fall and winter than last year, provided of course, steel shipments are reasonably prompt."

Excelsior Brick Co., Haverstraw, N. Y.:

"We do not contemplate making any new improvements for 1913. We operated seven soft-mud machines, manufactured by Charles Waldron, of Haverstraw, and Millard & Son, of Kingston, N. Y., during 1911 and 1912.

Terry Brothers Co., Kingston, N. Y.:

"We do not contemplate any improvements or extensions next season. On both plants we operate eleven

machines and in 1911 made about 43 per cent of our capacity and this year about sixty per cent."

Zeigler & Zeigler, Coeymans, N. Y.:

"In regard to the New York market, the selling conditions were fair, but at present they are a little slow. We do not contemplate any improvements as yet. We do not see anything ahead. Our machine equipment is three and we could only run two this summer, (1912) as the help was scarce in 1911. We used three machines a part of the time."

Wright D. Goss, Pres. Empire Brick & Supply Co. says:

"The selling conditions in the Metropolitan district during the season, 1912, thus far, have been an improvement over 1911. The prices of common brick have not changed much during the year, but have ruled somewhat higher than during 1911. The demand for brick has not been as great as was anticipated at the beginning of the year, but on the whole has been somewhat in excess of that of the previous year.

"We do not contemplate any expansion of our manufacturing plants, but are preparing to make some extensive improvements to the equipment before the opening of the season of 1913.

"The number of machines owned by this company is twenty-two, all of which were operated in the seasons of 1911 and 1912. The output of the plants of this company has been considerably below the normal output owing to the scarcity and inefficiency of the labor supply."

H. P. Brosseau, Schedack Landing, New York, says:

"We have run only one machine and not full time, and expect to make brick another year unless we sell. The selling conditions were good except that dealers kept barges for a month or more every trip and we are on the market for sale."

About twenty telephone replies and a number of personal interviews were obtained from New Jersey, New York and Connecticut producers. In Connecticut, local demand took a large part of the output but they shipped intermittently into New York. It is significant that in almost every one of the so-called "Foreign" brick producers, that is, those outside of the North river district, are planning for a bigger year although actual plant extension is the exception rather than the rule. Note the difference in tone of the following statement from the Sayre & Fisher Co.:

A. W. Tuthill, Mgr. Common Brick Dept., Sayre & Fisher

"From the manufacturers' standpoint the season of 1912 has been quite satisfactory. Second: we are always improving our plant and, in fact, it has been our custom during the past twenty years, to make all such alterations during the winter months. Third: Regarding our machine equipment, it consists of both soft-mud and plastic."

Of course, there is a tremendous reserve capacity in the Hudson river district than can be used in supplying all the ordinary needs of the Metropolitan district, and the North river producers are keenly alive to this fact. I have found that many of the producers expect to make extensive repairs to their machinery and boilers so as to be prepared for any demand, no matter how sizeable, that may be created during the coming year.

Most manufacturers are awakening to the fact that new commercial conditions are making it necessary to adopt more modern methods of doing business and that more concentration in selling methods will necessarily put heavier loads on their machinery. Some of them are taking Time by the forelock and are laying their plans so as to be prepared to take the top cream off the bottle of 1913 prosperity.

OPPORTUNITIES IN THE CONDUIT FIELD

Losses of Current, Dangers and Disadvantages Attending Overhead Distribution of Electric Power, Cause for Increasing Use of Burned Clay Conduit

By reason of the tremendous losses which are incurred by the old methods of transmitting electric power by costly systems of overhead wires, which are subjected to constant injury and deterioration by weather conditions, public service corporations are investing heavily in clay conduit, making a profitable field for the clay manufacturer. Mr. Crain tells of recent developments along this line in the following article:

By G. D. CRAIN, JR.



WHEN you do build, build with brick!" This business battle-cry has been sounded on many a field, in which the banners of competition float, and has been a rallying signal for the hosts of the clayworkers. It contains argument, suggestion, challenge. It makes people think. It gets the business.

It is effective because it leads the home-builder to investigate, and to determine, by actual figures, that it is



The Loading Crew at Work.

not only better to build with brick from the standpoint of the appearance of the edifice, but because it is cheaper. With maintenance costs staring him in the face and depreciation figures mounting higher, any one who has seen the books of maintenance of buildings constructed of inferior materials, needs little further argument when he hears the familiar advice, "When you do build, build with brick."

The immense importance of the general construction field in which the products of the kiln are used should not cause the clay manufacturer to lose sight of a gradually developing branch of business which can be still further expanded by just such educational efforts. It is in the engineering rather than the construction field, in other words, the consumption of conduits for carrying high-power electric wires is getting to be an immense factor in the clayworking situation, and deserves all the attention that can be given it.

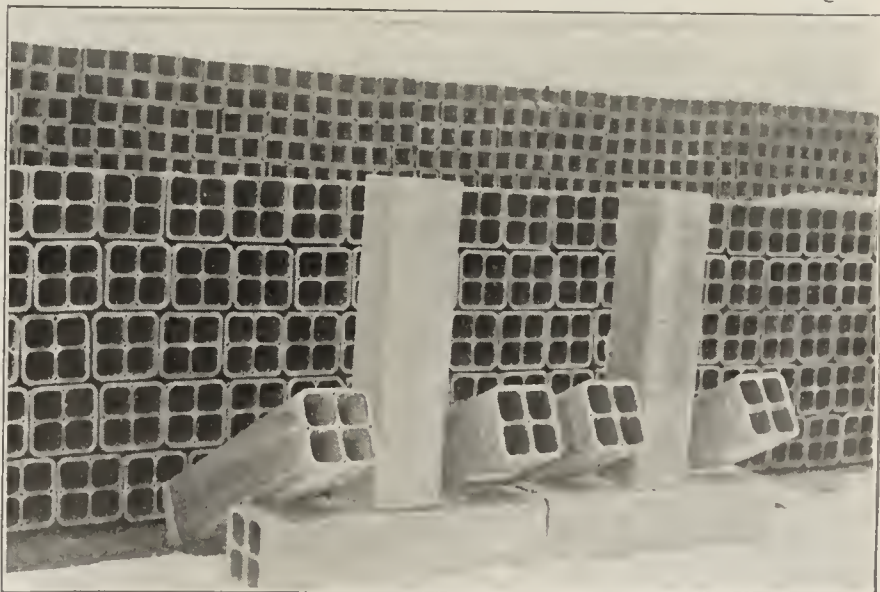
Room for Educational Work.

Here again there is room for the same sort of educational work that has been used in the building field. Here again is a chance to prove the permanent economy, as well as the structural efficacy, of clay. For electrical engineers have their own figures to prove that the apparently cheap construction which prevails in the overhead distributing system is a dismal failure from so many

standpoints that only the pressing need of economy is a good reason for continuing it. Force of habit is as responsible for the prevalence of overhead wiring as anything else, and it is a habit that the conduit manufacturer should do his utmost to break.

The losses of current which follow distribution by the overhead method are enormous. The changes of the weather are detrimental to insulations, and leaks are developed at every point along the line. The central station operator who is buying coal at relatively high cost, converting it into steam and manufacturing electrical current from the energy thus developed cannot look with equanimity upon line losses of this sort, for he knows that he is cutting down his dividends by just that much. When he realizes that the cost of his pole replacements and the expense of maintaining large repair crews which would not be needed if the line were better protected, he has reached the point where he is ready to say, "A well-built conduit system would be a saving instead of an expense."

And this is where the clayworker should begin to get busy. He should prove to the central station man, the telephone plant manager, the telegraph magnate, that it is false economy to leave wires overhead in congested districts where there are many cables and where the difficulty of making repairs and connections is increased. He should prove to him that his wires ought to be underground in residence sections, as well as merely in busi-



Finished Conduit Ready for Market.

ness districts where municipal ordinances may compel him to bury his distributing plant. He should produce argument and demonstrate that only in the rural districts, where the current carried is so small as not to justify large expense, should line losses and heavy maintenance charges be allowed to eat up the profits of the operat-

ing department and subject customers to annoyance.

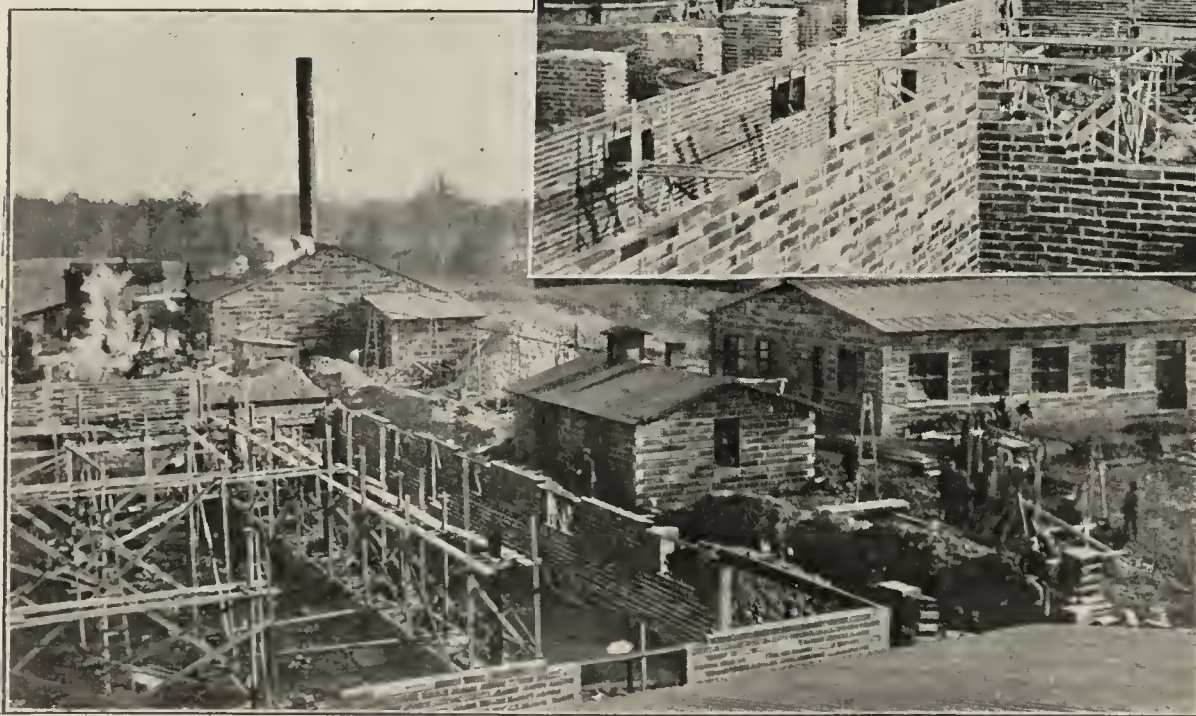
Just as in the paving brick field, the country is being convinced of the economy of brick roads not merely for cities but for the country as well, electrical concerns can be shown the economy of using conduit systems for carrying their wires all over their operating districts as well as in the small, congested section. And even in the latter field there is yet much to be done. While municipalities are bearing the brunt of the work in compelling service corporations to bury their wires and remove their poles, because of the fire hazard, unsightliness and other disadvantageous features, the clayworker should anticipate this work and secure the consent of the electrical plant owners before a city ordinance compels action.

Corporations Open to Argument.

Public service corporations are willing to invest in big improvements, provided they are confident they can earn dividends on the investment. One big gas company in an Ohio Valley city has arranged to spend \$5,000,000 on the construction of a pipe line from the natural gas fields to a city where natural gas is already being sold. The reason for this move in bringing fuel from the outside, a distance of many more miles, is that when it is brought it will sell at 35 cents per thousand feet,

lighting and power station, a system of costly surface poles and aerial wires has to be maintained. The line properties in this case are subjected to every possible influence which can make for deterioration in them. Changes in the weather ruin the insulation of the wires and subsequently render the slender copper threads themselves unfit for use. When a pole becomes thoroughly wet, no matter how well insulated the wires, a certain portion of the current passing overhead is grounded at each pole. Along many miles of poles in wet weather a tremendous loss is incurred in transmitting the product from the station. Then, the poles themselves are liable to every conceivable accident, and big forces of repair-men are absolutely necessary to keep the lines of a powerhouse in anything like working condition.

When the wires of a central station are laid in conduits they are protected from all of these harmful agents, and the line property is as near maximum operating efficiency as it ever can be. Encased in hard-burned, thoroughly vitri-



Views Taken Three Months After Fire of September 21st, Showing Splendid Progress Being Made In Rebuilding of the Clay Product Co.'s Plant, Brazil, Ind. Entire Plant to Be of "Fire Resisting" Type—Walls of Conduit with Brick Corners.



fied conduits, six or eight feet underground, the wires are completely protected from the weather. There is no chance for short-circuits due to dampness. In view of the fact that the lines are so far underground the chance of the conduits being broken is reduced to a minimum, and the connections remain permanently intact. The march of centuries would undoubtedly be required to crumble away a line of salt-glazed conduits, and thus far the history of central sta-

whereas it now costs 70 cents per thousand feet, thousands of prospective consumers remaining unconverted because of this latter fact.

The construction of the pipe line in this instance promises to expand the earning power of the natural gas company. That is the only reason why improvements are considered by electrical central stations. Furthermore, it is the main reason why wires are being laid underground and why clay conduits are developing a new avenue of consumption.

Under the old conditions, which would scarcely be called antiquated in view of the fact that electricity as a general proposition is yet young, the central station conveys its current to consumers through a net-work of overhead wires. Whether for a railway company, a telephone exchange or a

tions has not run to that extent. The many advantages of underground wires are that there is little if any loss of current in transmission even for miles, that delays through break-downs in line connections are eliminated, and that such a system is less expensive to maintain than any other.

No one realizes this more clearly than the electrical engineer. It is because of the circumspection of the technical experts in charge of big central stations that so much clay conduit work has been done already.

This reason is attributable to the wishes of the public. In practically every progressive city of the United States there is an energetic campaign afoot nowadays for the "City Beautiful." Municipal funds are being set aside to lay out sub-divisions in the most appealing and artistic manner, to

SALESMANSHIP—ART OF SELLING BRICK

Practical Treatise on the Subject of Marketing Clay Products—Fundamental Principles of This Modern Science Outlined

This is the first of a series of articles on "Practical Salesmanship as Applied to the Clay Plant," which will be printed in this journal during the year 1913. Mr. Krebs, a recognized authority on the new selling science, will write four articles, outlining the fundamental principles of salesmanship.

Other articles will follow, each by an authority in the particular field of selling treated. In future issues, these articles will take up in detail the actual experience of the salesman in the clay plant.

By STANLEY LEFEVRE KREBS



HORSE! a horse! my kingdom for a horse!" cried the desperate King Richard.

"A sale! a sale! my kingdom for a sale!"

How often the salesman and merchant fervently utters this cry, especially in dull seasons, dull towns and dull days.

In Europe salesmanship is regarded as a fixed and permanent vocation, an end in itself rather than a means to something else, as is so much the case in America. This constitutes one of the difficulties the American business man has to contend with. It should be made an end here, a *profession in itself*, with all the education and culture which other professionals get.

One can sell goods long before one studies the laws underlying it. But when one carefully studies the science it always improves one's art; and pays in cold cash as in many other ways.

In these strenuous days of specialization and combination, three fundamentals are necessary to success in business, namely: (1) Capital. (2) Organization. (3) Increasing Efficiency of Employees or Associates. In the third point lies the function of these articles. The result of these studies will be felt along five distinct lines:

1. It will raise the salesman's work to the dignity of a profession by demonstrating that it rests, where all professions rest, on science and art.

2. It will intensify his personal appreciation of the sciences and arts in general and of all the good things of culture.

3. It will help him to increase his individual earning capacity.

4. In consequence of all of the above, it will help forward the interests of business in general, and will enable all to progress intelligently.

5. Serve the public better in every way—*culture for service.*

The Old Idea of Salesmanship.

The old style of the merchant is represented in the character of "Mr. Trade-love," the typical broker in "A Bold Strike for a Wife," the celebrated novel of Mrs. Centlivre (1717). He was "a fellow that would outlie the devil for the advantage of stock, and cheat his own father in a bargain."

In the days of old, and not so long ago either, the tradesman would go out with a cargo, a pack or a wagon, sell goods on the road, and return home for another load. Business was transacted, also, through fairs, from place to place. Peddlers were numerous in those days, and accomplished service. But the idea of living *permanent neighbor to your customer* was not believed possible.

These traveling traders sought by hook or crook to get the highest price possible from each individual and sepa-

rate customer. They would squeeze out of the people all the money they could. Customers knew this, and hence defended themselves. *Caveat emptor*, i. e., "Let the buyer beware," was the feeling then. Under various forms, this feeling has survived until quite recently. In 1899, in the "American Journal of Sociology," salesmanship was defined by a writer who was describing the conditions in the retail trade, as "to see that no one escaped without making a purchase."

Formerly, the practice of medicine consisted in "bleeding" people. The former style of merchandising consisted in the same process, figuratively speaking.



"Like a cat with a mouse, you can master customers," said a professor in one of our most noted universities quite recently, while lecturing to a class of 200 men, on salesmanship. It was startling to hear this note, an echo of the old idea of salesmanship, which we thought so old as to be dead and buried by this time. But there it was, still holding up its head, in the person of this learned man—"like a cat with a mouse."

Suppose such a principle would be openly taught in any business establishment! Would that attract the public? The spider-and-the-fly idea! "Thank you," says Mrs. Public, "I respectfully decline to be the fly."

What absolutely unsound teaching that professor gave to that body of splendid men!—like a "cat with a mouse," i. e., lie in wait for your customer, watch for him, pounce on him, and bleed him! All to do him good, they would say! that is to "do" him good!

Salesmen! Is that what your life and activity are to consist of? A thousand times no!

Grandfather's method of Salesmanship has long since

been sidetracked, with his candle, hand loom and horse car.

A Transition age is upon us. The old is going. The new is coming. The salesmanship of the future will be a profession—a science and an art. Well, says Professor Harlow S. Perron, of Dartmouth College: "The business concern has relied as long as is possible on the general intelligence of the American youth; its need, in the approaching era of closer competition, narrower profits, a more highly organized system, is that same. American intelligence *specifically trained* for the performance of its particular services."

The New Ideas.

For the interest, the good, and the mental exercise of it, before you read the formal definition of "Salesmanship," formulate your own. Think it over, then write out a definite statement that will cover the subject, and do it justice. Try it! You will find you are confronting a difficult problem. It is not an easy thing to do.

However, you are willing to try. So you get a paper and write down:

Definition No. 1. Salesmanship consists in educated enthusiasm, pure grit, intelligent application, faith in yourself, and getting good ideas from any source.

You read that over, and think it over, and cannot help but decide that whilst it sounds good it is nevertheless too general, too diffuse, and all it does, really, is to name some of the contents of salesmanship, but does not define the power or art. You tear up the paper, and try again, but you can have the satisfaction of knowing that the definition you have just torn up is the one given by a very prominent writer in a book devoted to the subject. You try again.

Definition No. 2. Salesmanship is the faculty of influencing others, to please, convince, or persuade, so as to incline them toward the wished-for conclusion.

This definition emphasizes "influencing" the customer; but, if customers are like you and many others (and we half suspect they are), they do not like to know, or even suspect, they are being "influenced" by some art or trick unknown to them, but exercised by the salesman with whom they are dealing. The announcement that such salesmanship as this was being taught or studied in a store or business establishment would create suspicion in the community, and not confidence—and it is upon confidence that trade rests.

So you destroy this definition, which was Goddard's;—get another paper and try again.

Definition No. 3. Salesmanship is the power to persuade plenty of people to purchase, at a profit, that which we have to sell.

(1) This definition centers salesmanship in some subtle art or mental influence of the salesman; it makes the salesman the center. But the fact is, he is not the center; the goods are. It is *the goods* that have drawn salesman and customer together; they have not come out from their homes to see each other; it is about *the goods* they talk and think (or should) while together. The goods are the attraction; and as Science but reproduces Nature, so in any scientific system of merchandising the goods should be made the center. There is no other logical center.

(2) If customers know, or hear, that salesmen have been especially trained in the "power of persuasion" it will naturally have a tendency to set them on their guard. Customers would enter the store suspiciously and harden themselves against these high and mighty "persuaders"; they would fear them at all times; they would be ill at

ease. This surely would not be ideal; neither is it the real situation today.

(3) This definition says nothing about *the satisfaction of the customer*, and that, without cavil or peradventure, is a vital part, an immensely vital part of true salesmanship.

These three points combined cause you reluctantly to reject this definition, which is the official definition of a well known School of Salesmanship.

Definition No. 4. You tear up the paper and try the fourth time. You read up on the subject, to help you a little, and come across this: "No good thing is a failure; no evil thing a success."

This is called the principle of scientific salesmanship, by the author of a book on the subject, published in 1906.

That is a beautiful sentiment based on truth; but it lacks the definiteness and application requisite in a scientific principle. It is too vague, too general, too abstract.

It serves as a fair sample, however, of a good deal of the writing on the subject which is appearing in such large quantities these days. It will serve as exhortation, but not as instruction; for it immediately awakens the question, what is a good thing? And to answer that requires further thought and deeper analysis.

Definition No. 5. Salesmanship is the power to exhibit the true qualities and relations of merchandise so that people purchase to their own satisfaction and to the profit of the house.

EXHIBIT	1.	By Description	{ Oral (salespeople). Written (advertisements, catalogs, etc.).
	2.	By Display	{ Window. Counter (salespeople). Samples.

This definition places the emphasis where it undoubtedly ought to be, namely, *on the goods*.

If the emphasis is placed there it throws into the limelight (to the minds of salesmen) the *necessity of knowing their goods*. The goods are the theme of their lecture, the subject of their talk, the text of their sermon.

"The power to *exhibit* the true qualities and relations (use, comfort, beauty, etc.) of merchandise." The clerk's opportunity and power lie in the fact that he can use both forms of "exhibition" (Description and Display) in properly presenting the goods to the minds of customers.

If it be a cardinal principle that "A customer has a right to some guaranty that his purchase shall prove exactly as represented," then how important to "represent" the article *as it really is in all its* qualities and relations! To exhibit *it* and nothing but *it*!—nothing more, nothing less—to sink *self* behind *it* so the customer sees nothing but *it*.

Realize this simple truth, Mr. Brickman and Dealer; for it powerfully stimulates you to be *honest* in your descriptions and displays of goods.

"Unmodified *integrity* in manufacturing and selling merchandise is the great thing." Dishonesty concerning the goods in any particular is dishonesty to the patron.

Another point of value about this fifth definition is that "*the satisfaction of the customer*," which means **prompt delivery**, good condition of the articles when delivered and good workmanship, etc.—all of which are parts of *composite merchandising*—is covered by this definition.

With this definition thoroughly in mind, when the salesman comes to apply the Law of Sale, and induce or pro-

(Continued on Page 55.)

PLANT MAKES SPECIALTY OF FACE BRICK

One of the Most Successful of the Hydraulic Brick Company's Many Plants at Brazil, Indiana, a Model Type of Modern Plant Construction

By HAROLD B. REEDER



THE Hydraulic Press Brick Co., with its general offices at St. Louis, Mo., and twenty-six large plants scattered throughout the country, is undoubtedly one of the most widely known concerns of its kind in the country, one of its most enterprising plants being located at Brazil, Ind.

The clays of Brazil have for many years been recognized far and wide for their superior qualities, and realizing their possibilities for making high grade face brick, the Hydraulic Company purchased the plant which it now operates from the Ayer-McCarrol Clay Co. in 1906, and notwithstanding the fact that the plant was new and one of the most up-to-date in the country, extensive improvements and additions were made, entailing the expenditure of many thousands of dollars. These have been added to from time to time, and

the bottom of the grade. This has caused cars to frequently break away on the turn, the results of which are always dangerous and disastrous. However, a new entry is being opened and will be in operation shortly. This entry is situated in a direct line from the crushing room and will afford a perfectly straight haul of about 1,200 feet from the base of the slope in the mine. There is a distance of 200 feet from the entry to the base of the slope and the fire clay is obtained about 50 feet from the surface. Ten to twenty-five men are employed in the mine and the services of a mine superintendent are necessary. Hand drills are used to get the clay out in connection with frequent "shots." The fire clay is of a fat nature, very plastic, and burns a pretty buff and gray.

The clay cars which the company uses are of its own manufacture.



Snap Shots at the Plant of the Hydraulic-Press Brick Co., Brazil, Ind. All Kiln Firing Is Done Under Shelter—Loading Platform on the Right.

the works is now in excellent shape for taking care of the rapidly increasing demand for its products.

The grounds comprise fifty-three acres and contain an almost inexhaustible supply of rich fire clay and shale. Excellent transportation facilities, are provided, the plant being served by both the C. & E. I. and Vandalia Rys. All the buildings are of brick and are modern in every respect.

The fire clay and shale are obtained from two distinct sources, the fire clay being mined and the shale being obtained from a pit by means of blasting and hand shovels. At the present time, the entry to the mine is at a right angle from the straight stretch of track from the crusher house and, as the haul is a good 1,000 feet, it is rather inconvenient, for the turn is situated near

The clay is hauled immediately to the flusher and is neither stored nor weathered, neither being necessary owing to the fact that bad weather has no effect upon the mining of the clay. The clay is put through the dry pans immediately, of which the company has three; two being of the Bonnot manufacture and one of the American Clay Machinery Company's make.

The clay is tempered in two pug-mills, one American and one Raymond. The company uses two brick machines, one Raymond, No. 777, and an American No. 40, and also two Raymond rotating automatic cutters, 6 to 8 men being required on each machine. The work is facilitated by the use of one horizontal conveyor, the three dry pan elevators, and two dust elevators of the Bonnot make. Two waste conveyors of the C. & A.

Potts & Company manufacture, are used for conveying the imperfect brick from the machine back to the pug-mill.

Four hundred dryer cars are used, half of which were manufactured by the Ohio Ceramic Eng. Company, and half by the Atlas Car & Manufacturing Company, each having a capacity of 500 brick. Two double transfers are also used.

The dryer is of the waste heat type and has sixteen tracks, each having a capacity of eighteen cars thirty hours being required for drying.

The kiln battery consists of twelve 30-foot round kilns and four rectangular kilns, the latter being 75 x 20 ft. in size. The brick are set 30 high; and coal is used for watersmoking and burning. The round kilns are of the

solid-floor type and the rectangular are of the open-floor pattern.

The power equipment of the plant consists of two 100-h. p. Vanes horizontal flue boilers and one 50-h. p. boiler of the same make. A 250-h. p. Alfree engine is used to drive the machinery.

The plant produces a very superior face brick for which the Hydraulic Company is justly famous, the following styles being among the most popular: reds, browns, grays, gray mottled, buffs, buff mottled and salt glazed in a variety of shades.

The plant operates continuously during 52 weeks of the year under the direction of the following officers: E. C. Hervey, Indianapolis, Ind., sales manager, and H. R. Ireland, Brazil, Ind., assistant secretary and treasurer.



View Showing Office Building and Portion of the Immense Plant of the Hydraulic-Press Brick Co., Brazil, Ind.

TWELVE MOST IMPORTANT MINERALS.

Clay Products Rank Third in Value of Annual Output—Production Widely Distributed.

The twelve most important mineral products in the United States, in the order of value of annual output, according to George Otis Smith, Director of the United States Geological Survey, are coal, iron, **clay products**, copper, petroleum, gold, stone, natural gas, cement, lead, silver, and zinc. "For certain of these minerals," he said, "the Geological Survey presents estimates of the supply from which the nation's needs are to be met. For others, especially clay products and cement, the question of the supply of raw material from which they are produced is of little moment compared with that of the availability of the fuels necessary for the processes of manufacture.

"Of nearly equal importance with the factor of abundance of these mineral resources is that of distribution. In the first place, the widespread distribution of the raw material makes possible an industrial nation in which every state has some share in the mineral production and no state or section appears to have a monopoly.

GOOD DEMAND IN LOS ANGELES.

California Visitor Tells of Good Business Outlook in His Locality.

W. L. Mulford, president and general manager of the Mulford Vitriified Paving Brick Co., of Los Angeles, Calif., was a pleasant caller in our office Thursday, Jan. 2nd, and advises us that the brick conditions in Los Angeles are at their very best. His company is now 4,400,000 behind on orders and on Dec. 17th, turned down an order for ten million brick to go to San Diego. He further states that they have in process of manufacture 120,000 rail brick for the Fresno Traction Co. of Fresno, Calif.

This not only applies to his plant but others as well. Mr. Mulford says that it will be impossible to buy one million brick in Los Angeles today and have delivery started under forty days.

Mr. Mulford is in the East to buy an outfit of soft-mud brick machinery and 200 second-hand dryer cars. He has recently formulated an affiliation with the Tindal-Pinneo-Switzer Co., 218 Mercantile Place, Los Angeles, to act as selling agents for the Mulford products.

CERAMICS ADVANCED BY TUNNEL KILN

Absolute Control of Gases, Combined With Lessened Fuel Consumption, Marked Advantages of Interesting Type of Kiln at Staffordshire, England

If all the claims made by Mr. Seager of Bristol, England, for the new type of tunnel kiln, described, are substantiated by facts and experience, a distinct advance will have been made in the firing of fine ceramic wares, making possible the more perfect control of heat and its application in an economical manner, furnishing an apparatus at once scientifically accurate and at the same time practicable for ordinary everyday usage.

By J. A. SEAGER



VERY interesting equipment has been installed in England, at the Stoke on Trent works of Messrs. Barnett & Co., Ltd., which marks a distinct advance in the design of ovens for the firing of pottery. This installation is a new type of tunnel oven, constructed according to the designs of Mr. Conrad Dressler. The particular advantages of this type of oven are not only that of the great control of heat, but also the development of this heat and its application in an economical manner. The type of oven utilized, shown in Fig. 1, differs from the types of tunnel ovens which have been in existence on the Continent for some years, in that the flame does not penetrate among the ware, but is contained in combustion chambers or flues, which lie as independent horizontal shafts on ledges at either side of the track upon which

are made as thin as possible when using fire clay in order to allow the heat which is developed within them to get away freely. They are simply containers for the hot gases and are hence made very thin indeed. A portion of the flue, about 30 feet in length, consists of cast iron pipes by means of which the flue gases at the latter end of the tunnel are allowed to get rid of the remaining portions of the heat with greater ease, owing to the increased conductivity of the container at this section. In order to prevent the gases from circulating among the ware, an extractor fan is used which keeps the chamber always in a slightly rarefied condition. So long as there is this vacuum, the slight exchange of gas which is unavoidable between a combustion chamber made of many pieces and therefore leaky, and the oven, is from the oven proper to the chamber and not in the reverse



Loading the Car with "Green" Ware.

the goods travel. These chambers, which are about 80 feet long, are so constructed as to allow a circulation of air externally all around them. Moreover, they are so supported that they are capable of moving freely on a layer of sand in a lengthwise direction so that they can expand or contract with heating or cooling. They can thus be described as floating on the bed of sand and they



Car of Ware In Burning Chamber of Kiln.

direction. The fuel utilized is any material that can be made into gas.

Process of Combustion Described.

In Staffordshire, slack or small coal is appropriate with an admixture of coke if the fuel is too bituminous. To deal with this a producer is employed without injection of steam, the bars being cooled with water to make the

clinkering easier. Hydrogen is thus introduced into the gas, this having no evil effect owing to the vacuum produced by the suction fan. The gas is introduced in a heated condition by means of conduits at the head of the combustion chambers and about midway along the oven, as shown in the plan in Fig 2, a damper regulating the influx of the gas. Just in front of this point, the

run at one truck per hour. Moreover, in order to keep the heat as far as possible from the iron parts there are two cooling pipes running just above the iron parts which act as heat interceptors, keeping everything below them at a temperature which can be controlled from the outside. The air drawn through this pipe is quite cool even when drawn at a low pressure.

Operation of Oven Simple.

The work of the oven is simple. At a point in the gas conduit in front of the dampers there is an outlet for drawing samples of gas by means of which it is determined whether the gas is rich in carbon monoxide as it should be. This is repeated two or three times a day for a week or ten days, and combined with observation of the color of the gas and the state of incandescence of the combustion chamber, the speed of the firing not being interfered with.

It is found in practice that about two tons of coal will fire about ten tons of gas, and if poor gas is made the proportion changes. Once an hour a charge of coal is put in and every eight hours the grates are cleaned of clinkers. The manufacture of gas is regulated by the inlet of primary air and water and the amount of gas burned by the dampers in the conduit and the air inlet of the combustion chamber. Two observation holes are provided for inspecting the goods, one at the hottest point and the other a truck's length in front. A pyrometer gives the exact indication of the temperature and with advantage a recording instrument is used. Slight variations in the gas production do not affect the oven as its thick walls act as compensating accumulators of heat.

The loading operation consists simply in putting the goods on the front platform of the cars and pushing them in position for the propeller to grip at one end. In the case of tile these are built up in two rows on the cars, leaving a space between for air circulation. The method of loading a car is seen in Fig. 4. It will be seen that some very important advantages have been gained by this construction. The absolute control of the gases in the chambers by the vacuum producing fan ensuring the purity of the atmosphere around the goods treated; the control of the mixture of gas and air so as to avoid waste in combustion and the production of the necessary temperature with the smallest consumption of fuel and the facility with which it is possible to determine what is going on in the combustion chambers and the oven makes an apparatus which is not only scientifically accurate but practically possible, and there is no doubt that it marks a most important advance in connection with glost firing and possibly in the future with regard to biscuit or porcelain firing.

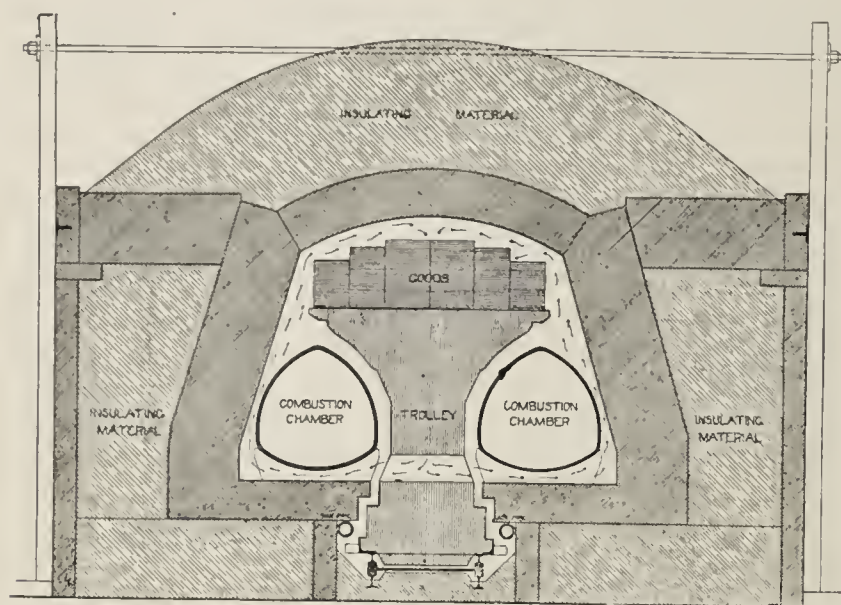


Fig. 1, Showing Cross Section of Tunnel Kiln.

combustion chamber is freely open to the admission of air, which is drawn into it by the fan and which, having circulated through the incandescent goods just fired, and now traveling towards the cooling end, is extremely hot. The vertically fired damper is operated from the outside to partly close the opening of the combustion chamber and regulate the inlet of the secondary air.

If the goods pass along between the two combustion chambers, they are from the very beginning of their transit immersed in a circulating stream of air which rises between the chamber and the oven wall to the vault, and then descends among them till it reaches the platform of the trucks on a level with the ledges on which the chambers rest. Air is then sucked in and once more circulated. This air becomes hotter and hotter until the point of gas combustion is reached, after which the goods commence to be cooled by the secondary air drawn from the other end.

Fig. 3 shows one of the traveling trucks or trays and it will be seen that wheels are done away with, a system of rollers being adopted which require no oiling. The goods are automatically forwarded by a propeller which works at the rate of 10 feet per hour. As the truck is 5 feet long, it is possible to run at a maximum rate of one truck per half hour, although the furnace has been

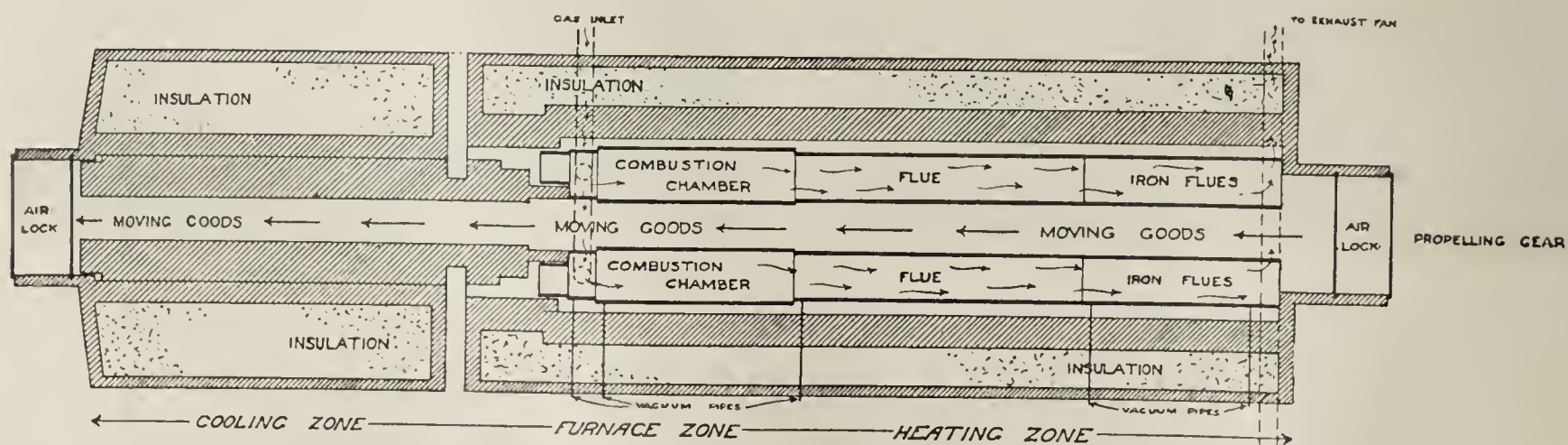


Fig. 2, Showing the Working Plant of Tunnel Kiln. To Make Drawing Clearer, the Transverse Scale Was Made Three Times Larger than Longitudinal Scale.

FINDS ELECTRIC DRIVE PROFITABLE

Ohio Face Brice Plant, by the Use of Twenty-five Electric Motors, Makes 100,000 Brick Daily—Clay and Coal Mined and Hauled by Electric Power

Electric power for clay plant usage has long since passed the experimental stage. Each year, however, brings out improved equipment which makes for greater efficiency and cheaper production of product. An excellently arranged and equipped motor-driven plant is that of the Puritan Brick Co. at Hamden, O., described in the following article:

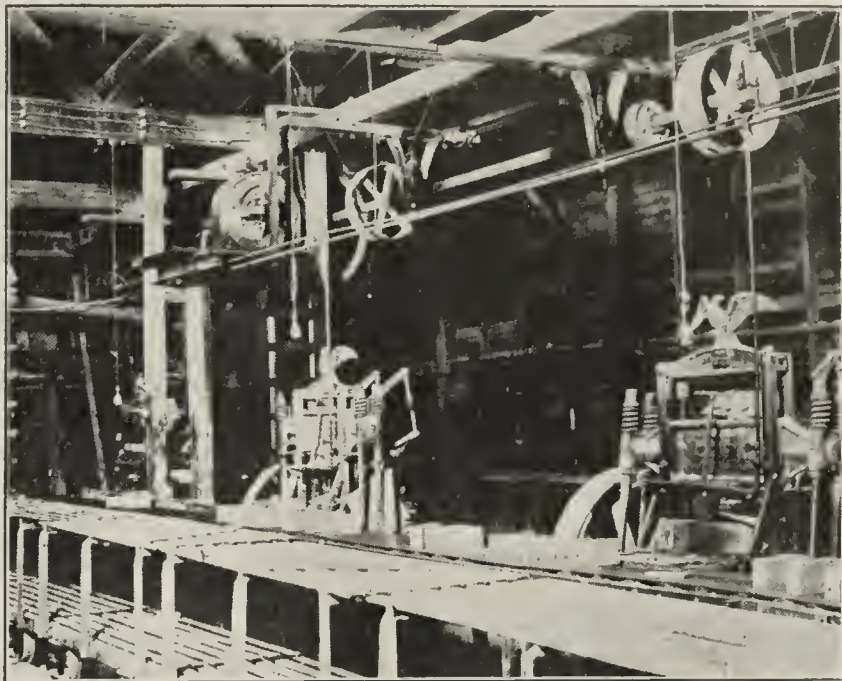
By CHARLES WEBER



THE Puritan Brick Co.'s plant at Hamden, Ohio, is probably one of the best examples of electrically driven brick plants in this country. The plant was carefully designed with a view to using electric power throughout and obtaining the best efficiency from it. There are many plants throughout the country which were originally planned for steam power, but which are now electrically driven, but as the Puritan Brick Co.'s plant was laid out for electrical drive, it contains features which are not usually found in other plants.

The power for the Puritan plant is developed in a power house, located at a distance of about 1,000 feet from the brick machinery buildings. This arrangement was made for two reasons: first, because it was desirable to have the generating equipment away from all the dirt incident to the handling of dry clay; and second, because the plans of the company anticipate further developments

corliss engine of 400-h.p. capacity direct connected to a 300-kw. generator, a 150-h.p. Russell high-speed engine direct connected to a 100-kw. generator. The generators are of the three-phase revolving-field type and furnish current at 60 cycles, 600 volts. Direct current used on a



Motor Driven Eagle Repress at Puritan Brick Plant.

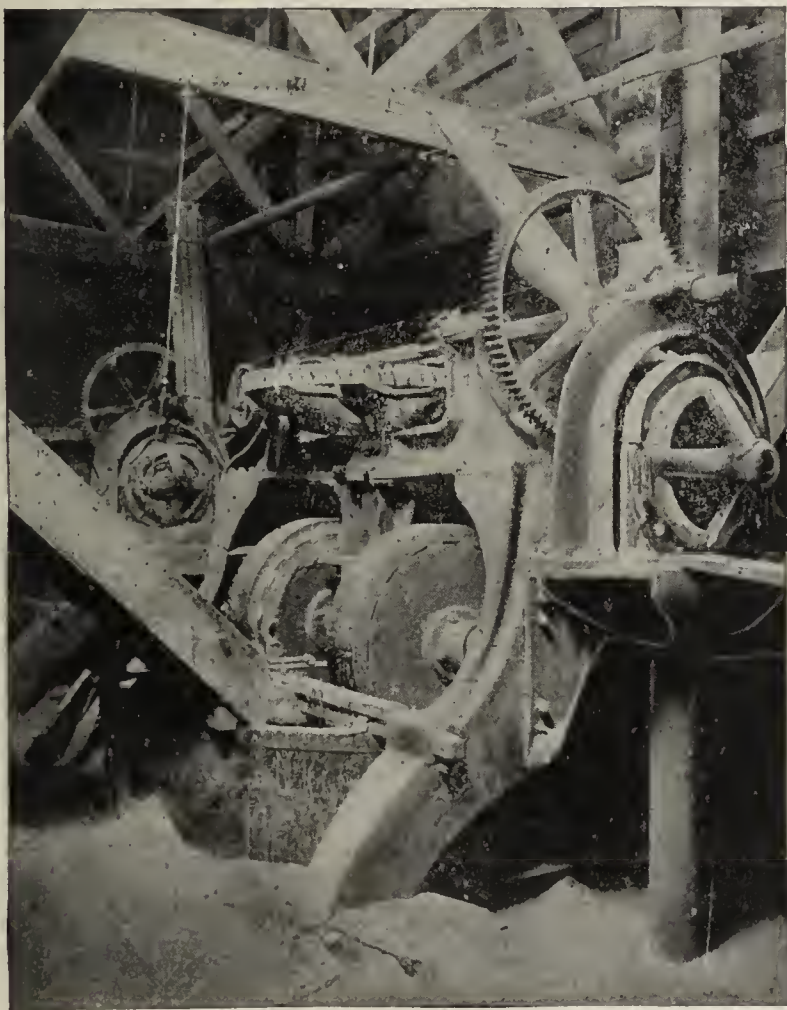
tram road system for conveying materials is furnished by two motor generator sets, one 100 kw. capacity and the other 35 kw. capacity, one using a synchronous motor, the other an induction motor drive. The entire electrical equipment of the power house was furnished by the Fort Wayne Electrical Works.

Every effort has been made in designing the power house equipment to make it possible for a complete shut-down to occur and in future extensions of the power house this plan will be further developed.

Various Methods of Utilizing Electricity.

The 100,000 daily brick output of the Puritan plant is made possible by the use of some twenty-five electric motors, ranging in capacity from five, to one hundred horse power; nearly all being 550 volt, multiphase induction motors. In the majority of cases the motors are direct connected to the machines which they drive, but in a few instances where better efficiency could be obtained by group drive, the motors are belted to line shafts from which a number of machines are driven. The views accompanying this article and the following brief description of the general operations will give a good idea of the ways in which electric power is efficiently utilized in an electrically operated brick plant.

The Puritan Brick Co. manufactures facing brick and in connection with this work mines its own coal and clay



Two of the Five Dry Pans, Each Driven by Electricity, at the Plant of the Puritan Brick Co.

which, when completed, will extend around the power house as a center.

The power equipment in brief consists of two 400-h.p. Sterling boilers, operating at 150 lbs. pressure, one Bates

The coal is taken from a tunnel mine driven into a hill, located about 100 feet above the plant. The coal is undercut by an electric cutting machine and is hauled by electric locomotives directly to storage bins at power house and burning kilns respectively. The clay is mined

storage. The mixing is performed by disc feeders which drop the clay in the desired proportions on the conveyor leading to the pug mill. From the pug mill, the clay drops by gravity to the auger machine where the brick column is formed, and cut by a rotary cutter into the individual brick.

The cut brick are now carried to the repress machines where they are forced into molds and subjected to heavy pressure which smooths up the surfaces and squares up the corners. They are then loaded onto dryer cars, which are run into a dryer, consisting of long tunnels, through which air, heated by being drawn through kilns of cooling brick, is forced by large electrically driven fans. After drying, the cars of brick are taken to the kilns by means of an electric transfer car, and after burning are piled in large storage sheds bordered by railroad loading tracks.

Certain parts of the plant, notably the fans in connection with the dryer, are operated continuously. The large engine-driven alternator in the power house furnishes sufficient power for operating the plant during the day except in unusual instances, while during

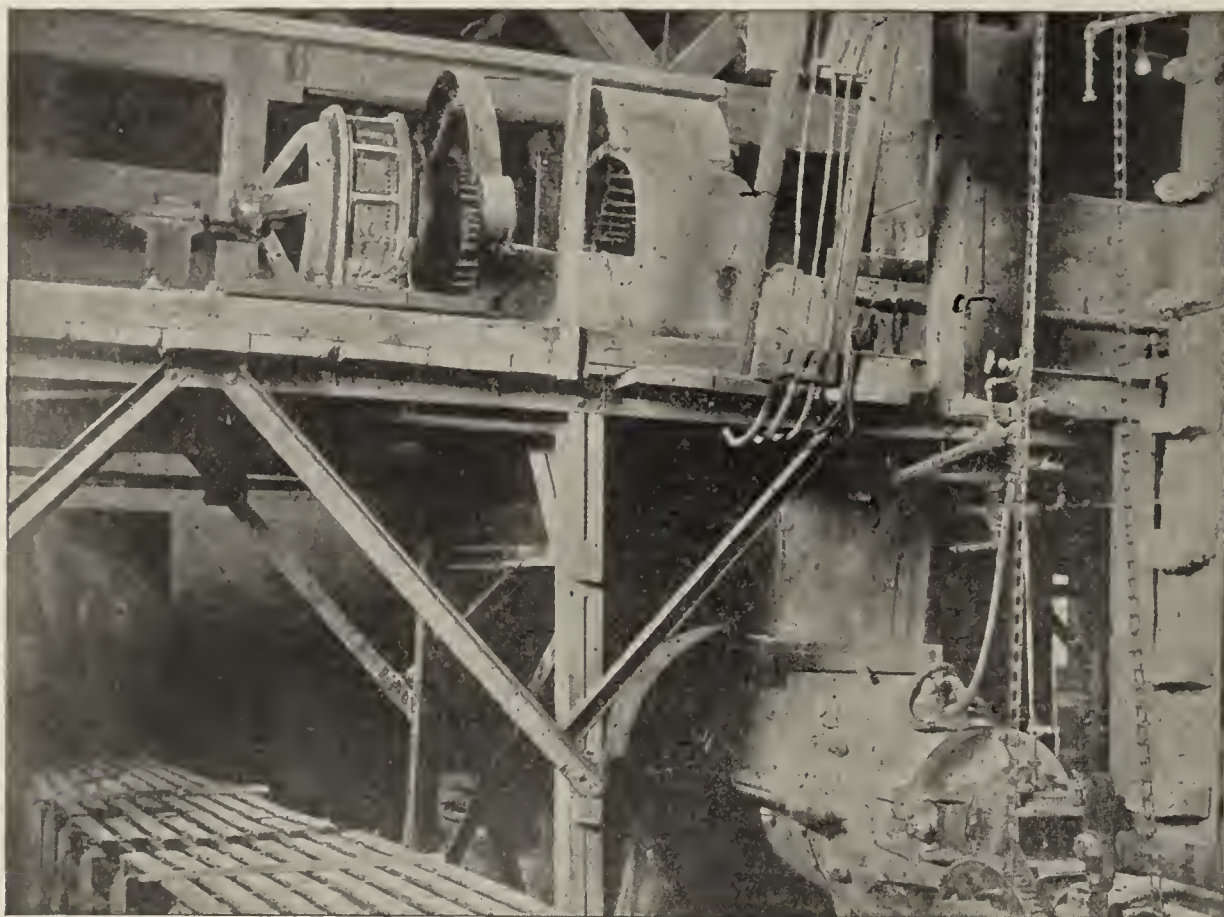
the night the small engine-driven alternator furnishes the required current for power and light.

The study of the adaptation of electric drive for clay plant usage is at present of general interest as a means of lessening the cost of production.

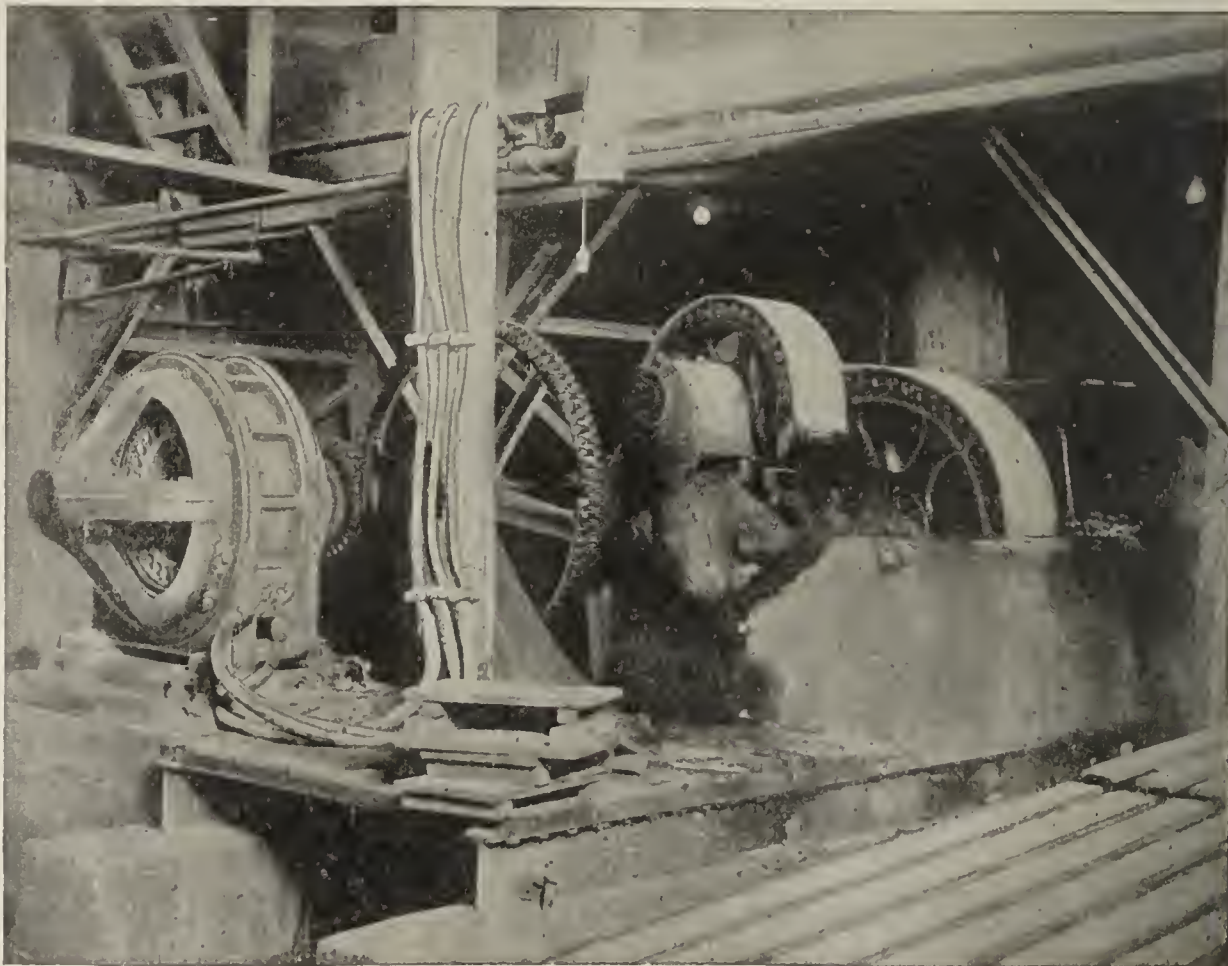
both from drift mines and from open cuts; electric drills and an electric locomotive find service in the mining of the clay. Most of the power required on the tram road, however, is for hauling the empty cars to the mine, as the tram road is so laid out that practically the entire haul to the plant is by gravity.

The clay is carried to the crusher house located alongside the brick plant and is here dropped from the bottom dump cars into jaw crushers, which reduce it to dimensions of about two inches. The crushers feed directly into an elevator boot and the clay is carried up and dumped into conveyors which in turn carry it to six large storage bins, having a capacity of about a week's run for the plant.

The clay can be dumped from the bottom of these storage bins into other conveyors, which carry it to the dry pans where it is pulverized. The pulverized clay is elevated to the top of the building, screened and placed in a second storage bin, having a capacity of a day's run of clay. This bin is partitioned so that two entirely different kinds of clay can be used at the same time, being mixed if desired, in any proportion as it is taken from this last



Three-Phase 600-Volt 720 R. P. M. Motor Directly Connected to Pug Mill at Puritan Plant.



Electrically Driven Auger Machine with Capacity of 110,000 Brick Per Day at Puritan Plant.

OMISSION OF BOOK TILE BRINGS DISASTER

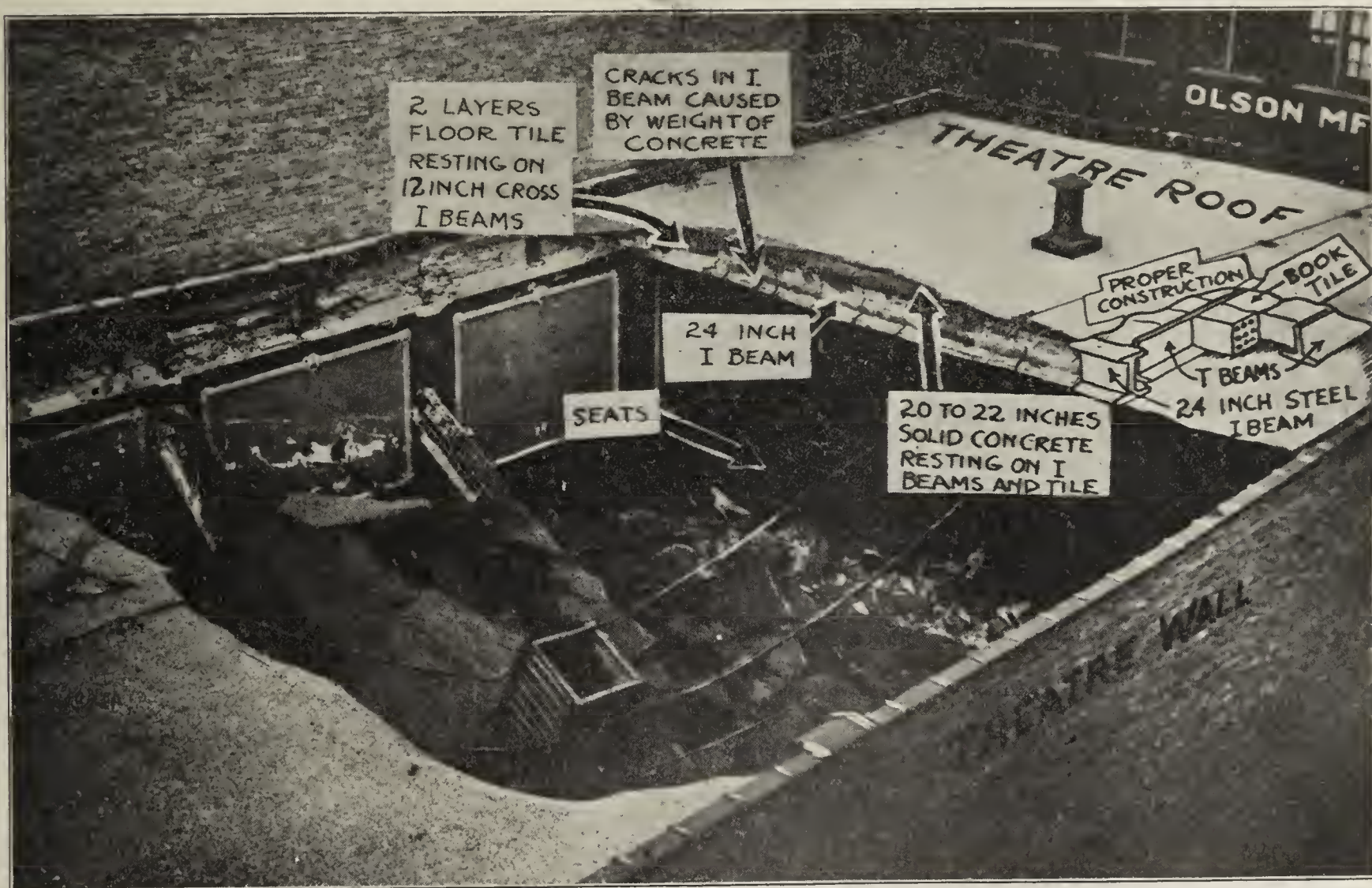


HAD a performance been going on at the time the concrete roof of the Home Theatre collapsed, Chicago would have had another catastrophe equalling the Iroquois disaster, marked against its history. The building commissioners, after examining the ruins and considering the amount of material that fell, stated that had the house been filled at the time the accident occurred, fully 400 people would have been killed outright, like rats in a trap without the least possible chance to escape.

Had the specifications of the contract been complied with and the proper materials used the roof would never have caved in. The contractor in order to save a few dollars on the job, substituted cinder cement for clay book tile and thereby through his criminal recklessness imperiled the lives of hundreds of human beings. The

material in the roof was cinder concrete the same as used on public streets, supported by 24-inch "I" beams, instead of the specified book tile. The final plans for this roof which were passed on by the building department called for 24-inch "I" steel beams and light "I" iron to support light three-inch book tile, with no filling between the lower 24 "I" beams and the book tile. The city commissioners assert that the light fire-proof book tile is the only material that should be used for this purpose.

The authorities have secured samples of the cinder cement, used in constructing the roof of the Home Theatre and will make thorough tests of it. Furthermore they will be extremely cautious in passing on any other building calling for this style of roof and will insist on the use of clay book tile as specified.



Home Theatre, Chicago, Ill., Ruined by Collapse of Concrete Roof—Specifications Called for 2-Inch Book Tile.

INTERESTING POTTERY IN DORSETSHIRE, ENGLAND



IN THE light of present-day achievements in methods of manufacturing clay products with up-to-date labor-saving machinery it is a "far call" to the early-day methods of pottery making, where the primitive method of treading the clay is employed. One of our representatives, while traveling in England, recently came across a picturesque pottery in Dorsetshire, in the village of Verwood, where this method of preparing the clay is still in use.

Mr. C. W. Fry, the present proprietor of the pottery, which has been operated more than a century, turns out some ware which is ornamental as well as useful, as seen by the illustration.

A pleasant hour spent with Mr. Fry in inspecting the pottery discloses the fact that not only the old-fashioned method of treading the clay is still in use there, but the potter's wheel, turned by a small boy, the interesting kiln in which the ware is burned, the two-wheeled cart which conveys the ware to market are all of the century-old

type, and we must confess that an American motor truck standing in the yard would be out of place and spoil the picture.

The pottery produced at this works is, as would naturally be expected, unique, and for that reason popular with the seeker of the unusual. It is scarcely probable

that in A. D. 2012 there will be found in any modern country such an interesting relic of primitive pottery making as is here found, which by contrast shows what great advancement has been made in this branch of the clay industry during the past century. The photographs shown below were especially taken for this journal.



The first picture at the left shows the old fashioned method of treading clay with the feet. At the right, the boy is turning the pottery wheel. Below at the left the ware is being taken to the kiln. At the right the finished ware is being loaded to take to market. In the center Mr. Fry, the proprietor, is seen inspecting the ware.

AN ARCHITECTURAL TRICK.

Clever Color Arrangement of Terra Cotta Adds to Appearance of Height.

On the 55-story Woolworth Building in New York City, the terra cotta has been treated with surpassing cleverness. Besides emphasizing the vertical lines, color has been made to play an important part, and so subtly done as not to attract attention. According to a writer in the "National Builder," the trick consists in simply using a slightly darker tone for the surfaces between one window head and the sill above, which, repeated for scores of stories, adds decided emphasis to the already great appearance of height.

In the matter of enriching the crown of both the building proper and its tower, Mr. Gilbert, the architect, has devised a motive which does not project unduly nor does it interrupt the verticality of the building, like a cornice. It consists merely of a Gothic canopy, and where the tower leaves the building this canopy has been so broken as not to interrupt the flight of the shaft.

AMERICA PAYS HIGHEST WAGES.

Comparison With English Scale Shows Difference of More Than Two-Thirds.

American workmen will be interested and surprised at the very low wage scale paid to the English mechanic.

The difference in the wage scale between the two countries is shown by the comparative wage scale paid in Manchester, the third largest town in England, and Chicago, Ill., the second largest town in the United States:

	Manchester.	Chicago.
Carpenters	—20 cents per hour;	65 cents per hour.
Brick Masons	—21 cents per hour;	65 to 72½ cents per hour.
Stone Masons	—24 cents per hour;	65 to 72½ cents per hour.
Plasterers	—21 cents per hour;	75 cents per hour.
Plumbers	—22 cents per hour;	75 cents per hour.

To the American workmen the English wage seems hardly enough to keep body and soul together. Wages however, are relative. It is said that the purchasing power of money in England is more than double what it is here in the United States.

BUILDING OF BRICK TRUNK SEWERS

Although Health and Sanitation Depend Upon Them, Little is Known by the Public of Their Construction—New York Has Notable Example

Notwithstanding the fact that the life and health of our city residents are directly dependent on the proper construction and maintenance of our sewers, few give the matter any thought or attention. Mr. Maginnis tells in the following article some interesting facts in regard to the service which brick performs in sewer work, old and new.

By OWEN B. MAGINNIS



AMONG the important services which brick renders to mankind there is none, where it should be appreciated more, than in the construction of sewers.

We read in "Les Miserables," Victor Hugo's great work, that the great sewers of Paris were built of stones variously wrought from the year 1663, and note, "that up to 1806 the city had five thousand three hundred fathoms." After Brumeseau (evidently the designing en-

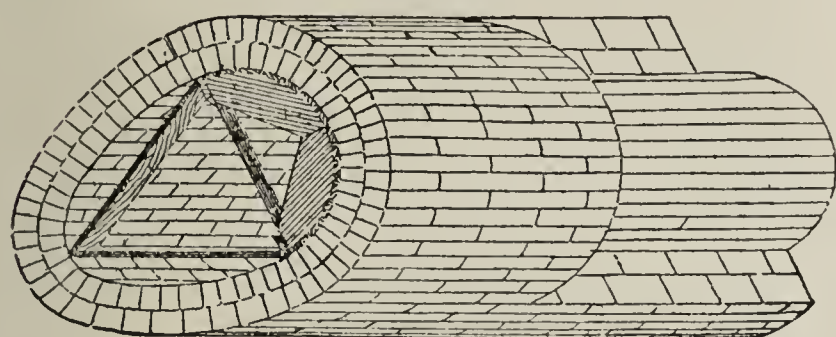


Fig. 1.

gineer) on the first of January, 1832, it had forty thousand three hundred metres—formed of stones with hydraulic mortar, which hardens under water, all resting on a foundation or base. The writer has been through some of these sewers, and they certainly reflect great credit on the men who designed and completed them, being generally rectangular in section with inverse curvilinear bottoms; yet in comparison with those of modern times in Europe and America now universally constructed of brick laid in Portland cement mortar, they are no better.

The subject of sewer construction seems generally to be tabooed in engineering literature yet it is just as interesting and important as any other, especially as it mostly deals in the use of ceramic and clay materials, so that it is worthy of the consideration of readers of this journal.

Inadequate in Congested Districts.

Primarily, the problem may be termed a simple one, involving the adoption and use of glazed and vitrified pipes, too common and well known to need much comment; except to note that no other material for small domestic work seems to fulfill its purpose as well as these, iron being too subject to early corrosion or decay by reason of the injurious acids actively at work with their chemical action in sewage, and concrete, too porous and subject to seepage and disintegration which the first material can successfully resist, provided the workmanship and clay be good. But occasions arise when the capacity of molded pipes is exceeded by the demand of the sewer conduit for a larger sectional area for conveying matter from the entrance to the outlet as in the case of street, avenue or "Trunk" sewers, the last title being applied to those, where many minor sewers converge to, and empty into

one of very large area, close to lakes, or rivers, their final delivery outlet.

In the ordinary street sewer, in large cities in congested districts where the high buildings are close together and thickly inhabited, pipe sewers are inadequate and those of brick are introduced or substituted, their sectional area being of circular or egg-shaped form or outline; the first being well known, the second represented isometrically as shown in Fig. 1, not so well known, but although more expensive to construct, are infinitely preferable for successful drainage: for the reason, that the sectional area of each conduit increases diametrically in proportion, as the passing matter increases and rises, thus naturally



Showing Jean Valjean Making His Escape in a Great Parisian Trunk Sewer, Lighted by Gratings Not Tolerated in These Days.

adapting itself to the greater or lesser capacities. This will be obviously understood by a very simple theorem that less area or pipe is required for conducting small quantities of fluid than for much.

Seen in outline, as in Fig. 2, and its method of delineation to exact measurements, this section is drawn by assuming any perpendicular or plumb line as A B and level

or horizontal line as C D, with the intersections of these lines as center and any fixed radius, say 12 inches, striking the upper curve or suffit as C, A, D. Produce C D to E and F, and make C, E and D F equal to C G. Now make G I equal to C D and divide it into four equal divisions. Next take H as center and H I as radius and describe the small bottom circle shown. From E and F as centers with E D and F C as radii describe arc joining

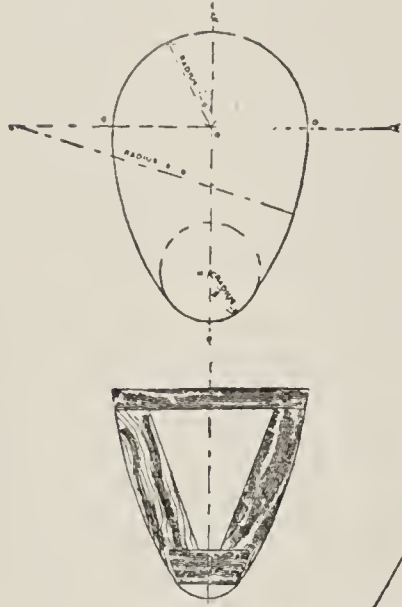


Fig. 2.

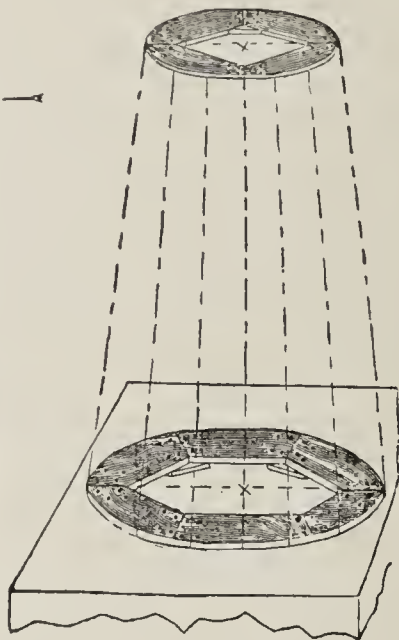


Fig. 3.

the bottom circle accurately with the semicircle C, B, D; thus completing the curve.

The wood templet necessary for the brick work and centering made to this geometrical layout, which I believe worthy of publication because so little is known,

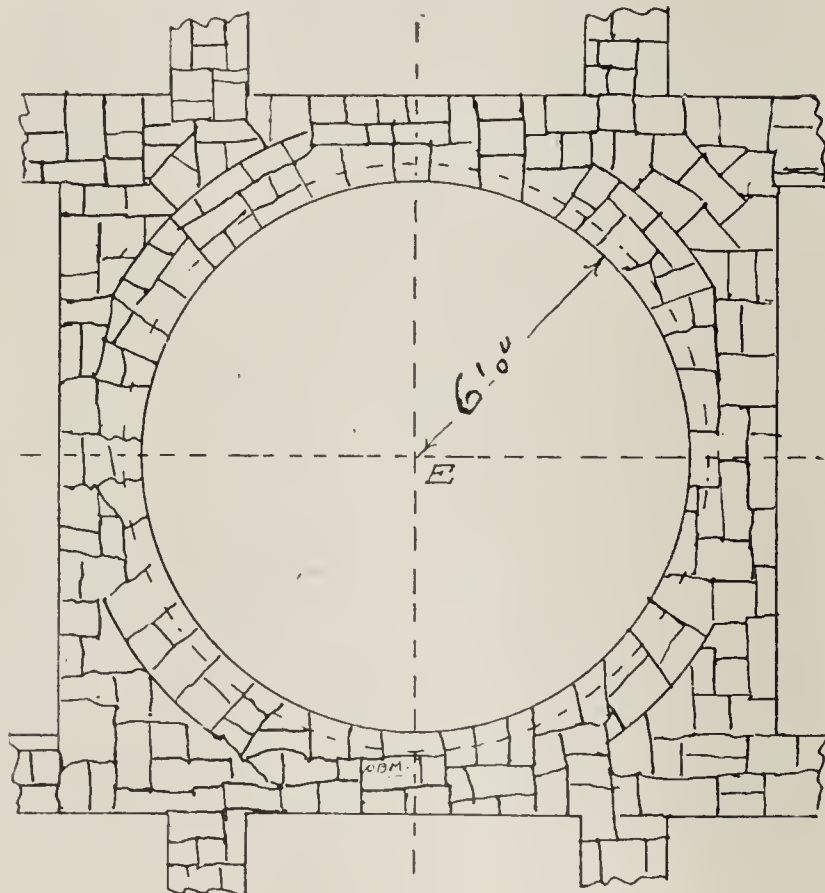


Fig. 4.

is made as shown below the diagram, and may be made of the following timbers—rough spruce or pine woods strongly nailed together. Frames, $1\frac{1}{2}$ or 2 inches; batteries, 1 or $1\frac{1}{4}$ inches; supporting uprights, 2 x 4 inches. All these must be set to their proper grades and pitches and when the conduits are completed and the mortar

perfectly set, the wood frame should be broken or burned out.

Brick Manholes Indispensable.

Brick manholes are indispensable adjuncts and features of this work. Placed, generally, at intervals of 100 feet apart on the centers of their vertical axes they are built for greater strength, conical or battered, as depicted in Fig. 3, and are for the purpose of making examination, repairs and cleaning convenient. Large enough for men to enter and work in, these hollow truncated brick cones fulfill their humble yet useful purposes beneath the street levels and it is perhaps to many citizens too much beneath their dignity or notice to observe men remove the iron caps or covers and go down into the depths of the earth, there to proceed to their arduous and imperative duties, which are just as essential to the betterment and welfare of the community as any other work, in fact more so, as

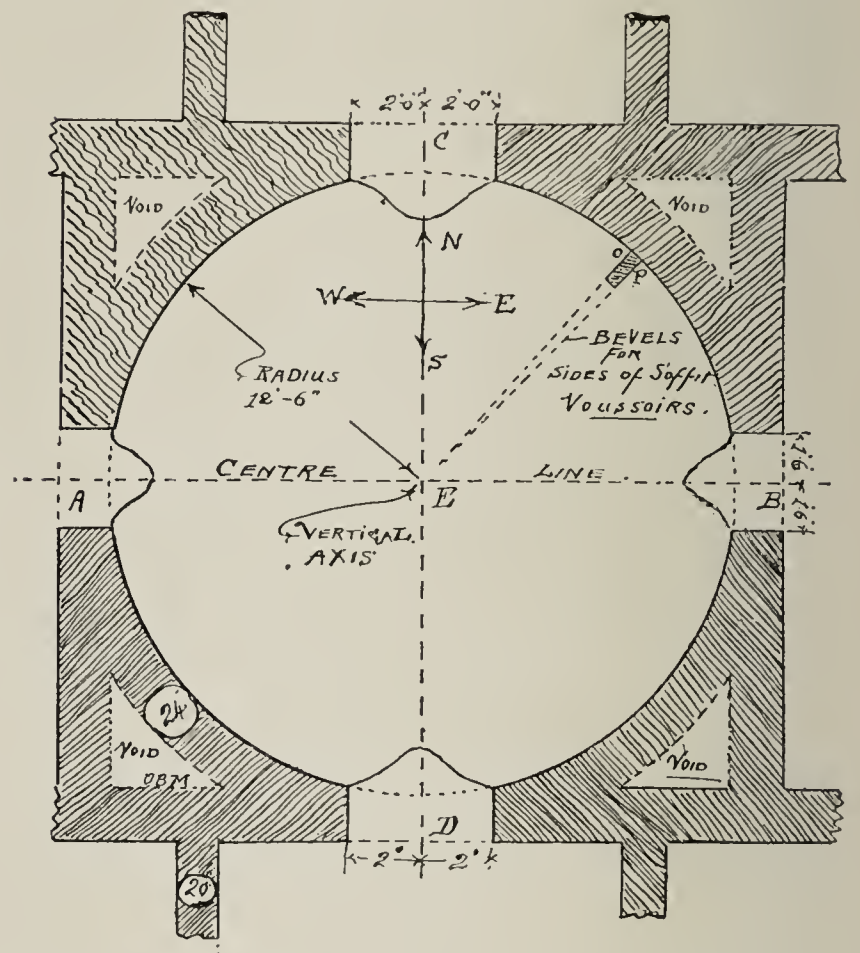


Fig. 6.

the condition of the sewers has much to do with the continuity of health and the safeguarding of the home from disease and epidemic.

Making the Wooden Molds.

To make the wooden molds spoken of requires a very simple operation, though it involves the batter principle before described, and consists in making two disks or rings of the diameter called for in the engineer's plans and specifications, one for the bottom and one for the top. The top template is supported at the necessary height and set level, and the bottom is placed on the circular opening in the chamber below, and the lines are fastened to the edges of each template from nails driven into them. The mason or bricklayer carries up his courses of brick level, turning them round these lines as he goes up, at the same time breaking joint and bonding. These manholes are from 8 to 16 inches thick in the ring or wall, and laid in cement mortar with the inside joints struck smooth.

Sewers of very large area have generally sloping or battered sides with inverted arched bottoms and segmental arched tops and some of them are very interesting. In

the city of New York there are many utterly unknown to the citizens, except those who are engaged in the important work of the Department of Sewers. Some of these sewers, built of brick, are large enough to drive a horse and wagon through, without touching the sides or top of the sewer. These sewers last for many years, with but few repairs. Figs. 4, 5 and 6 illustrate the brick chamber of one built at or rather under four intersecting avenues and streets. It is an interesting piece of brickwork, executed in the most thorough manner and buried many feet under ground. The details are self explanatory and it must here be noted, that all this work of a subterranean character must be substantially constructed of the very best brick and mortar, and laid by the best mechanical workman, and no city sewer engineer or inspector should tolerate any except the best material and workmanship.

There is no halo of glory, no glamor of romance about sewer work, in spite of the fact that the wonderful, before quoted, French author has immortalized it, in perhaps the greatest novel ever written, but to those interested in ceramics and clay materials it has a significance of meaning which is of the highest importance and of which they should be proud. There is no showy architecture nor beauty in it. It is never seen, it is buried, yet it is alive and active. Let the readers of this journal, not in the sordidness of business, or the daily routine of busi-

ness, remember that the materials which they furnish may not, as Hamlet's gravedigger says, "last forever," but they do last a long time and it should be a source of congratulation to recollect that these commodities, al-

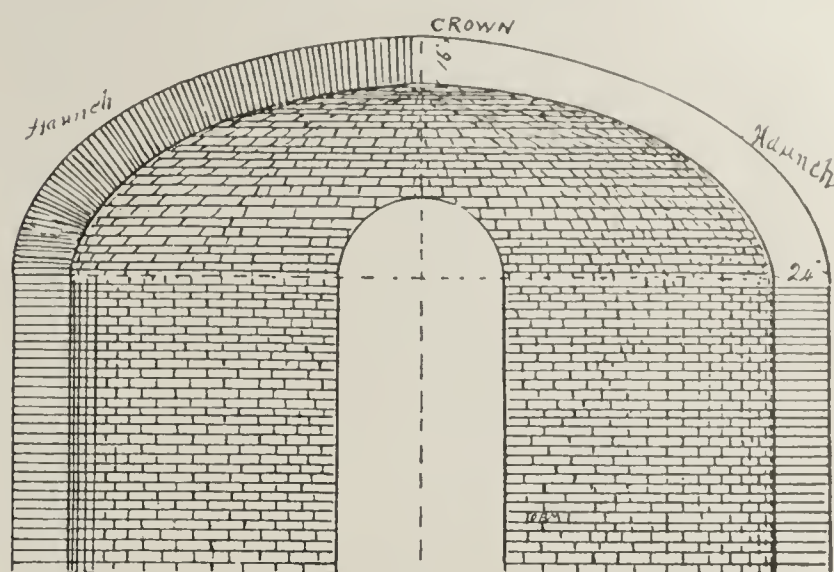


Fig. 5.

though in this case, out of sight of human ken, are of the most essential character and useful in protecting the health of the community at large.



THE BRICK SALESMAN

Much Credit for Growing Popularity of Brick, Due to Zealous Work of Salesman—Knowledge of Manufacturing Essential



It has been observed within the last few years that brick buildings, which have recently been erected and which are now being erected, are, as a class, far more artistic than buildings which were erected seven or eight years ago, or even within a shorter time.

This is largely due to the fact that owners have come to realize that the selection of face brick for their office building, store front, residence, or apartment is all important and that the architectural beauty of the building will be lessened and the financial value decreased should a face brick be adopted for use in its walls which is not adapted to the particular type of architecture employed by the designer of the building.

Although, as above stated, the owner's realization of the importance of the proper selection of face brick has played an important part in the bringing about of this advancement toward the artistic in face brick, the potent factor has been the brick salesman, and to him may be given much credit not only for the betterment of face brick but, also, the increased demand for every clay product which is manufactured in the United States.

The opportunities offered the young salesman today in the exploitation of clay products are wonderful and unlimited. There have been, however, exceptions to the statement that the brick salesman has aided in the progression of face brick, but these exceptions are due to the fact, that in some instances, the heart of the salesman was not in his work, and he occupied his position, not for the advancement of his employer's welfare and, incidentally, his own, but for the pay check which he re-

ceived monthly. Face brick concerns, better than anybody else, recognize that such a salesman, if he may so be called, is an impediment to the advancement of the clay products industry and, well for that industry, he does not last long.

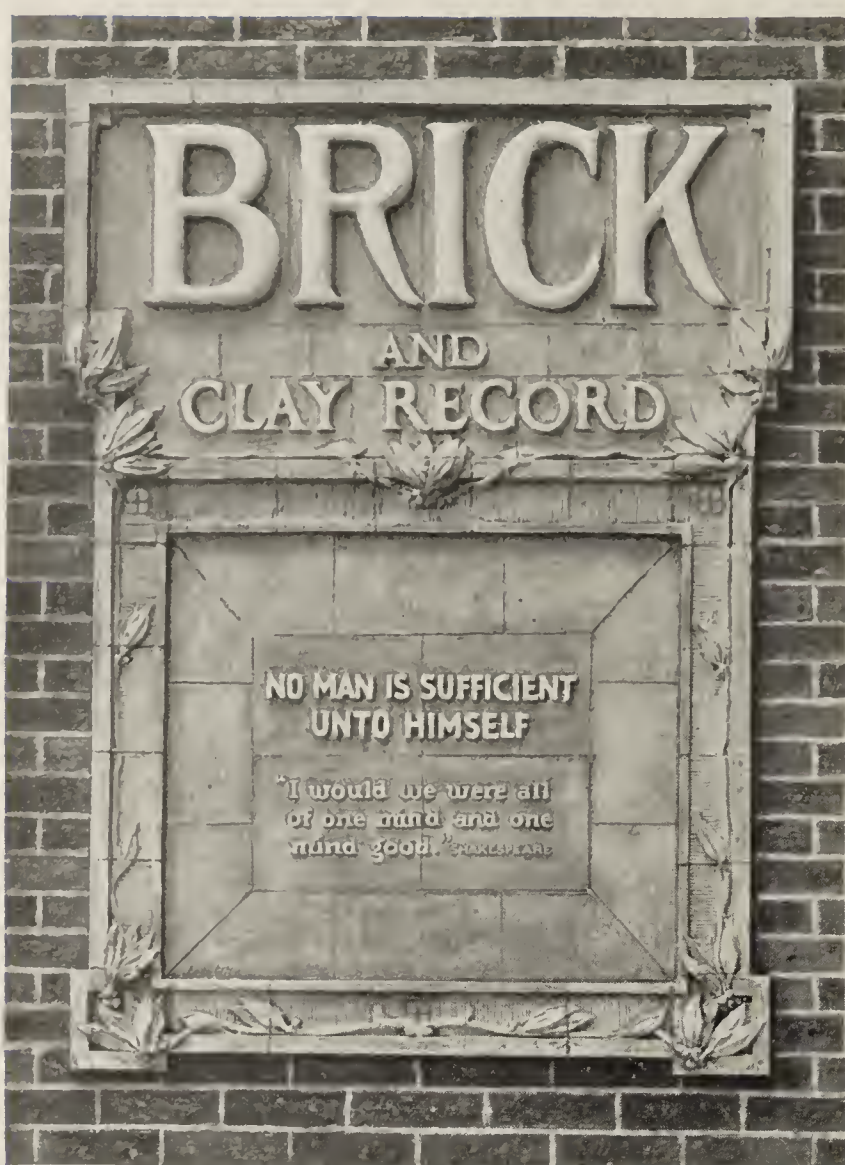
Study of Conditions Necessary.

The brick salesman of today, in order that he may become expert in his line, which is necessary to gain the confidence of his customer, must make a deep and careful study of not only the effects obtained by the different treatments of face brick but he must be thoroughly familiar with their manufacture, and the conditions existing not only at the plant from which the brick that he sells are secured, but also the conditions surrounding the plants of his competitors.

The study mentioned above requires a great deal more time and thought than the simple statement leads one to believe, for the science of brick salesmanship involves a part of the profession of architecture, or, at least, a small knowledge of certain parts of this profession, and an understanding of the trade of bricklaying and building construction.

Much more might be said regarding the brick salesman and the essentials required to make a good brick salesman, but, as these conditions are in common with the science of the sale of all articles and go to constitute a good salesman in any line, they need not be spoken of here.

To the young man entering upon a business career, the opinion has been given that he can take no step more for his self betterment and quick advancement than that of entering the sales department of a reliable concern handling face brick. Such a place is today waiting for live young men who desire to enter into this phase of the business and all that is required is loyalty to clay products and the concern for which he works, integrity and an aptitude for hustling.



VOL. XLII.

JANUARY, 1913

No. 1

BEING OF ONE MIND

It is customary for "Brick and Clay Record" to go to considerable expense each year to decorate the outside cover page of the big New Year's number with a design of a special nature.

For several years Mr. John Paulding, the eminent sculptor and modeler, has been employed to furnish the designs.

Aside from the fact that he is a **GREAT** artist and has the **ABILITY** and the **SOUL** to do the subject justice, Mr. Paulding is an adept in **CLAY MODELING** which makes his cover designs **PARTICULARLY** appropriate to this journal.

It is well, of course, that a valuable issue of this journal like this big New Year's Number always is, should be made as **ATTRACTIVE** as possible and these artistic covers **HAVE BEEN MARKED FEATURES** in this regard.

But this desire to give our readers a **PLEASING** effect is not the **ONLY** one that prompts these special covers. There is a **DEEPER** and a **MORE IMPORTANT** mission.

Usually we strive to drive home some lesson. If you recall last year, the cover showed four symbolic figures—Frost, Fire, Water and Time. These figures

were very striking in the boldness of their treatment and their unsuccessful attempt to destroy burned clay was most cleverly emphasized.

Other cover designs in previous years have been just as strong as the one last year and each carried **SOME** lesson.

The cover this year is a little different—in fact it is a radical departure in treatment, but **NONE** the less **ARTISTIC** and **NONE** the less **EDUCATIONAL** in its subject.

Mr. Paulding has sought to emphasize the importance of **UNITY** in the clay industry—the key note of a very aggressive campaign which "Brick and Clay Record"—**YOUR** journal, has striven to promote in the hope of **AWAKENING** the latent possibilities of burned clay through organization work.

Suppose you turn to the front cover just for a moment. You will note, as you have already, perhaps, that the general effect is **PLEASING**—that there is **HARMONY** of color, **HARMONY** of design—and **HARMONY** in treatment.

HARMONY!

It is a small word but it carries a **WEALTH** of meaning.

What if one could speak of the various branches of the clay product industry as one **HARMONIOUS** body—all pulling—all working to one common end!

Note the compactness of the brick wall? Do you observe how closely bound is the terra cotta panel to the brick wall?

If the clayworkers of the Nation could present the **SAME SOLIDITY OF FRONT**—if they could **MARCH** forth with the **SAME BOND OF UNITY**, what a **DIFFERENCE** it would make in the years to come.

The sooner we learn that "No man is sufficient unto himself" and the sooner we appreciate the **NECESSITY** of being of "One mind" in the clay product industry, the **QUICKER** burned clay will take its place **AHEAD** of its competitors.

"In **UNION** there **IS** strength" and in no place is this trite quotation more **FORCIBLY** brought to mind than with the clayworkers.

Let us start out with a New Year's resolution to get **CLOSER** together in 1913. Let us resolve to **DROP** petty jealousies. Let us strive to **JOIN HANDS** in a general fight throughout the country to put burned clay in the lead.

The "Get-to-Gether" spirit is **YOUR** hope—**YOUR** salvation. **UTILIZE** it.

LOOKING FORWARD

Father Time, in his march, has recorded another year and if we could see the big ledger in which he

SAILING THE BUSINESS SEA IN A TUB



has enrolled the events of the past year undoubtedly we would find some **VERY INTERESTING** entries.

On **WHICH** side of the big book do you **BELIEVE** **YOU** have been placed, Mr. Clayworker—the one on the left where **WASTED OPPORTUNITIES** have been recorded or on the right where the names of those who have **DONE WELL** with the ten talents given them?

If we lack ambition—if we are easily satisfied—if we are prone to **ACCEPT** what we **RECEIVE** and **SEEK NO MORE**—it is natural that we should look back over the past and try to console ourselves with the thought that we **HAVE** done well.

If we are progressive—if we are **DISSATISFIED** with our lot as we find it—if we strive to **ACHIEVE** even **GREATER** things than we have—we look backward with a **DIFFERENT** feeling. We know, of course, we have done well, but **NOT** as well as we **KNOW** we **CAN** do.

If you are in the former class—and there are too many that are clayworkers, you are to be **PITIED**, for as long as you are satisfied so long will you **FAIL** to move **FORWARD**.

And mark you, it is a well-recognized law that

NO LIVE THING CAN STAND STILL. We must either **ADVANCE** or **RETREAT**.

This is true in **ALL** nature. The tiny acorn sprouts and sends forth its shoots. It grows and continues to grow until it becomes a great tree. And still, not contented, it **CONTINUES** to grow and grow until it becomes the marvel of **ALL** trees.

One day, however, the man with the axe comes along and fells it with his blows. What happens? Does the tree continue to **GROW**? No. From **THAT** day on it begins to **DETERIORATE**. Gradually the germs of decay set in and in the course of time it lays a worm-eaten example of **INACTIVITY**.

So it is with man and his value as an active part of the world's progress.

He cannot stand still. He must either move ahead or go backwards.

Don't let the axe of discouragement **STOP** your **GROWTH**. Grit your teeth and remember whatever you **WILL** to do you **CAN** do.

Look over the year now closed. Build two heaps—one your **ACHIEVEMENTS** and the other your **FAILURES**. Stand off and study the two with a **CRITICAL** eye. Take pride in what you **HAVE**

done successfully but don't forget there is the other heap of wasted opportunities.

Be **DISSATISFIED** with what you have **NOT** done—for it is through **THIS** that you will resolve to do even better this year.

The year 1912 in the clay product industry—when the statistics are all in, undoubtedly will show progress over 1911 which was a disastrous one according to the United States geological reports—the clay industry **FALLING OFF MORE THAN SEVEN MILLION DOLLARS** in that year.

It takes just such a bump as that to **AROUSE** us from our lethargy. It takes just such a prod as that to **STIR** the fighting spirit of the **REAL** clayworker and make him **REALIZE** that in **INACTIVITY** there lies **DANGER**.

Look forward, Mr. Clayworker. There is a **BRIGHT** future for you. Buckle on your spurs. Adjust your armor. Get into the thickest of the battle for business. Let's make 1913 the greatest year in the clay industry. You **CAN** do it but you **CAN'T** do it and stand **STILL**.

"Brick and Clay Record" is **WITH** you heart and soul. We shall continue to **PROD** you. We shall continue to **SYMPATHIZE** with you in your failures and **GLORY** in your successes. Here's wishing you all the prosperity you **DESERVE** and may you **DESERVE MUCH**.



THE PILGRIMS' LESSON

In the gray dawn of the early morn of 1620 a little band of Pilgrims landed on the shores of the Massachusetts coast after a perilous voyage across the sea.

This handful of zealots withstood privation. It braved death many times as the angry seas washed over the frail craft that bore it hither. It stood bravely by the mast as the storms tore at the little sail boat and tossed it about in the waves like a feather.

History does not record **ALL** the harrowing experiences of that memorable voyage, but it is safe to say that there **WERE** those among the number that **DESPAIED**.—That there were **SOME** that **LOST HOPE** and that **OTHERS** grew so **DISHEARTENED** they urged and demanded that the mission be abandoned—and that the tiny craft be turned backward in its course.

History does not record it but it is easy to imagine that there were **ENOUGH** strong-hearted men—**ENOUGH** courageous women in that little band to **KEEP ALIVE** the spirit of the others and to bring them safely to their goal, or else History would not be able to record the story of this Nation.

There is a lesson—a most powerful lesson, to be gained from that little band of Pilgrims—a lesson that **EVERY** disheartened clayworker may well take unto himself.

And that lesson is this:

That whatever you do, it is **BETTER** to do it **WITH** strong friends at your side—**WITH** courageous brothers ever ready to lend a helping hand.

Suppose those Pilgrims had started across the seas as **INDIVIDUALS**? Suppose that **EACH** took it upon himself to sail away for the Land of Promise in a small tub?

How **MANY** do you suppose would have **REACHED** the goal?

It is the same with us in **EVERY** walk of life. It is just as true in **YOUR** walk of life—the clay product industry.

So far, most of you, have been **TRYING** to sail the Seas of Business in a **SMALL TUB**—all by yourself—as **INDIVIDUALS**.

And what is the result?

The storms have tossed your frail craft about. The angry waves have washed you away from the mast. Few of you ever reached your goal.

Why not learn a lesson from the Pilgrim forefathers?

Why not band together?

The coming year—the one upon which you are just starting, promises to be the most prosperous in the history of the Nation.

There will be vast building enterprises. Homes and factories will be erected as never before. Great sewers will be constructed. Vast acreages of farmland will be drained. Miles of streets and country highways will be paved.

Naturally you expect prosperity, and you will have it to **SOME** extent, despite the fact that you are tossing about in a **TUB**—Despite the fact that you are **ATTEMPTING** to sail the turbulent seas of competitive business **ALONE**.

But think what you would gain if you were riding in a great Ocean liner—a powerful **Queen** of the Business Seas—banded together even as the Pilgrim forefathers were banded—into one great, compact body—every individual inspired with the **SAME** hope, with the same ambition—to gain the Plymouth Rock of Business Success!

What was true with the **PILGRIMS** is true with **YOU**. You must have the **GET-TOGETHER** spirit if you would gain your goal.

You must join the faithful, every-ready associations that have been organized for your good.

You must not only become a **MEMBER** of the band but you must **WORK** with the band.

In the advertising section of this journal you will find several of these associations **APPEALING** to you to join hands with them. Accept their invitation. Write to the secretaries. Get in touch with

them—not **NEXT** week nor **TOMORROW**, but **TO-DAY**.

Do not sail in a **TUB**.



THE BRICKLAYER'S FUTURE

On the bricklayer of the future rests largely the fate of the brickmaker.

We have proved by centuries of Practical use that burned clay is the only **DURABLE, FROST-DEFYING, MOISTURE-PROOF, FIREPROOF** building material.

We have learned **HOW** to make **GOOD** brick **CHEAPLY**.

These things we **HAVE** done.

What we have **NOT** done is to put our products **INTO** the building as cheaply as the lumber man puts **HIS** product into a house or the cement man puts **HIS** product into four walls.

In other words the brick**MAKER** has done about all **HE** can do and it is now up to the brick**LAYER**.

So long as the brickmaker charges **MORE** to **LAY** the brick than the brickmaker **GETS** for his finished product the brick building business of the Nation will suffer.

If the union bricklayer **REFUSES** to look ahead a little and figure on what **INCREASED** building would mean to him and refuses to adjust present conditions to bring about such a desirable situation—if he is so short-sighted he **CANNOT** or **WILL** not see that the best interests of the brickmaker are likewise his own best interests, then the brick manufacturer must take hold and work out the problem **HIMSELF**.

How?

The answer is simple:

Make more bricklayers.

Urge the young men of your community to learn the trade of laying brick. Show them what a **PROFITABLE** trade it is.

There are scores of young men in every small city or town who are **STRUGGLING** along on wages that **BARELY** keep them in clothes. Teach them a trade that means a **LIVING** wage. Teach them a trade that means **HEALTH** because the work is in the **OPEN** air and disease does not **THRIVE** where **SUNSHINE** and **FRESH AIR** can get at the destructive germs.

Show them the **OPPORTUNITIES** that such a trade will open up to them. Point out to them the **CONDITIONS** that exist today between you and the bricklayer. Tell them how you are **HANDICAPPED** by **LACK** of skilled help—how your neighboring brick manufacturers are **RETARDED**.

You say that the bricklayers' union refuses to

accept apprentices? Of course. But it does not refuse to permit a **SKILLED** workman to **JOIN** its organization, once he has **LEARNED** the trade.

If the union will **NOT** allow the young men—the ambitious and the progressive element of your community, to learn the trade **UNDER** its guidance, there are trade schools that **WILL** teach them. See that they get the opportunity to attend these. Encourage them. Urge them.

And when they come **OUT** of those schools—skilled in the trade as **ANY** union man, you can rest assured the union will not permit them to work **OUTSIDE** the fold.

It is the **MONOPOLY** the bricklayers' union has on the trade today that makes the undesirable conditions in the building industry.

Break that monopoly—inject some new blood into the organization—increase the numbers and, at the same time increase the skill, and you will have **SOLVED** your problem.

With **FIVE** or **TEN** bricklayers where there is only **ONE** today labor conditions will adjust themselves. The law of demand **REGULATES** wages and working conditions just as it does prices of commodities and utilities.

There necessarily need not be any desire to **REDUCE** wages, although the union bricklayer of today is getting **FAR MORE** for his day's labor than any **OTHER** union man working on construction work in competition.

What the bricklayer **SHOULD** do and what he will **HAVE** to do is to take off the limit on what he **CAN** and **SHALL** do.

Today he is forced in most cities to limit his day's work to one thousand brick—one-third what any competent bricklayer **CAN** do without **EXERTING** himself.

If he will lay **THREE THOUSAND** brick a day the brickmaker can well afford to pay him \$6 a day and his helper \$4, and still compete with the lumber man and the cement man who pay **THEIR** employees only \$4.50 in the one case and \$2.50 in the other.

It is not a question of **WAGES** so much as it is a question of the **AMOUNT OF LABOR** that shall be done.

Patronize the trade schools. Urge your young men to learn how to lay brick. That is the **SUREST** way to bring about a re-adjustment of present conditions.



THE CLAY SHOW

Many clayworkers look upon the Annual Clay Show and the annual sessions of the National Brick Manufacturers' Association and all the other great

organizations as a sort of occasion to have a **GOOD** time.

There is no question but what those who participate in these annual events **DO** have a **GOOD** time. There is doubt but what they find they have been **ROYALLY ENTERTAINED** and that have had the **OPPORTUNITY** to **SEE THE WORLD** a little and rub elbows with their fellow men.

This is as it should be, and those who fail to have the **GOOD** time do so because they have **NEGLECTED** to take advantage of the opportunity, for every effort is made by those whose business it is to **PREPARE** entertainment to do it right.

Here in Chicago, for instance, where the Second Annual Clay Show and the conventions of the various organizations are to be held next month, there is every opportunity to enjoy one's self.

The city in itself is a treat to many.

And then its houses, theaters, gardens, parks, show places, the gilded cafes and all the other attractive things that go to make the **BIG** city a place worth while to visit.

This year, too, as was done last year, when we had the clay workers with us, **SPECIAL** effort will be made to entertain visitors in **EVERY** conceivable way. Aside from the various regular attractions there will be many special ones—all arranged for your benefit.

NOTHING is going to be left undone that will interest and entertain you.

But while the spirit of joviality and the desire to be entertained will be fostered do not forget that, after all, the Clay Show and the various conventions are **BUSINESS** enterprises and that you are a **BUSINESS** man and that you are expected to participate as a **BUSINESS** man who **WANTS TO LEARN** what his neighbor is doing and tell that neighbor what **HE** is doing.

In other words, while you are expecting to have a good time and **WILL** have a good time—socially, do not overlook the real purposes of the Clay Show or of the conventions.

There is every indication that the Second Annual Clay Show is going to be **MANY** times **GREATER** and **BETTER** than the First. This depends, of course, upon **YOU**.

If you are a manufacturer of clay products see that your wares are exhibited at the Show. The investment is small but it is a profitable one, for it is in this way you let the rest of the world **KNOW** what kind of **GOODS** you **MAKE**.

CLAY SHOW NUMBER

January 15th issue of "BRICK AND CLAY RECORD" will be devoted chiefly to the Clay Products Exposition which will be held in Chicago, February 28-March 8

There will be twenty-five dealers from Chicago alone at the Show, to say nothing about the dealers from every city in the land.

And these dealers will be seeking to find some clay product of unusual texture, or color or design.

Last year at the Clay Show one Chicago dealer alone closed deals with nearly ten exhibitors for their entire output and the plants of some of these manufacturers are located as far away as Texas and California.

Another dealer in the Middle West arranged to take over the entire output of two plants and even loaned the owners money to re-equip so that their capacity might be increased to fill his demands.

You can see, then, the wonderful possibilities in this one direction alone.

But there are others. Contractors, architects, prospective home builders—people who will buy clay products, these will be in attendance.

And **SOME** exhibitor is going to close contracts with some of these.

There is more than pleasure to be gained from the clay show and the small clayworker as well as the big fellow can find profit in exhibiting his wares.



THE CASE OF HOLLOW TILE

Elsewhere in this issue there is the second article on the unjust insurance rates charged hollow tile by Mr. Grayar, one of the staff writers of this journal. The first article appeared in the December 15 "Brick and Clay Record," and told how a dealer ran up against a **SNAG** when he attempted to sell a prospective customer some hollow tile for the construction of a garage.

The dealer made the sale with the understanding that his material would be given the **SAME** insurance rates as **BRICK**. Up until that time he **THOUGHT** hollow tile was classed just the **SAME** as common brick. He found out, however, that the insurance people considered it **MORE THAN A THIRD HIGHER RISK** than brick and about on a **PAR** with concrete block.

This nettled the dealer. He rushed off to the State inspection bureau and **PROTESTED**. He was referred to the Underwriters Laboratory in Chicago as being the proper place to make his complaint.

The Underwriters said the rating was in accordance with the instructions from the laboratory. They admitted, however, that no **ACTUAL TEST** had been made and that the figures were determined in the **ABSENCE** of a test.

Mr. Grayar has made an investigation of the hollow clay tile, since the last issue of this journal and he finds that **THOROUGH** tests **HAVE** been made

by MUNICIPAL bodies and that based on **THESE** tests **BUILDING** laws have been framed and that **ARRANGEMENTS FOR TESTING FIRE-PROOF BUILDINGS HAVE BEEN MADE.**

But the insurance rate **REMAINS** the same, notwithstanding.

You see the test must be made **BY THE UNDERWRITERS** which is a sort of clearing house for the various insurance companies. And **UNLESS** this test is so made the rate will **REMAIN** and hollow tile will **CONTINUE** to be classed with concrete block.

Mr. Hollow Tile Manufacturer, **THE THING TO DO** is to have a test made by the Underwriters, and you should get together on the matter and see that one **IS** made.

But you must be sure that the test is a **PRAC-TICAL** one.

It won't do to have it done **HALF** way. The test must be just as thorough as the one conducted by the City of Cleveland and which Mr. Grayar tells you about in his article on another page.

This journal has received a number of letters from tile manufacturers throughout the country within the last two weeks. These letters express **SURPRISE** that such a condition exists. Some intimate that the writers will contribute to a fund for the purpose of having the Underwriters' test made.

This is the **PROPER** spirit. Let other hollow tile makers express themselves in the same way and the test **WILL** be made.

The Second Annual Clay Show will be held in Chicago next month. At that time there will be a number of hollow tile manufacturers in attendance. The question of the test should be taken up at that time.

In the **MEANTIME** let us have some expressions from those who are **INTERESTED.**



THE ERA OF CLAY NEAR

The era of burned clay is near at hand in the United States.

Lumber has had **ITS** day. Concrete has been **TRIED** and **FOUND WANTING.** There is **NOTHING LEFT** for the homebuilder and the factory builder but **CLAY.**

When the pioneer left the shores of the lands across the seas and came to America to build a nation he found boundless forests. He was obliged to clear these away to find soil to till.

The axe and the saw were wielded **MERCILESSLY**—without thought of the **FUTURE.** Vast areas of virgin forests gave way to great stretches of farms.

The **ONLY** idea of economy that struck the

pioneer was to utilize the fallen trees and build his home and shelter for his cows and horses.

The log house appeared. Later, as the pioneer prospered and he found time to **THINK** of being comfortable he turned a wistful eye back to the fatherland across the seas. There his father and his forefather before him built of **BURNED CLAY** and of stone.

But **THESE** things were **NOT** for him. The industrial life of the country had not kept pace with the agricultural interest. To get brick meant to bring it from **EUROPE.** To obtain stone meant expensive quarrying and cutting.

So the pioneer **TURNED BACK** to his forest. The logs that had housed him until now gave away to the sawed plank. The frame house came into existence.

That was some centuries ago. And from **THAT** day until a few years ago, the American homebuilder has depended largely on the forests to give him a home.

And this was natural—so long as the forests lasted. It meant economy for the **PRESENT** at least and that is what the early American **FIRST** thought of.

But what a **USELESS** waste! What a **SHORT-SIGHTED** people our forefathers were!

Today—with the forests depleted, lumber is becoming a **LUXURY.** The Nation is spending Millions in teaching the people **CONSERVATION.** Skillful writers—learned students—**ALL** are calling a **HALT.** Conserve your forests they cry. Use **ONLY** what you **MUST** have and **SAVE** the rest.

A few years—at the present rate of educational work—and the Nation **WILL CEASE TO USE LUMBER** for building purposes. Homes and factories will be built of **BURNED CLAY.** The forests will be conserved and **ONLY** such lumber as will be **REQUIRED** for interior finish—for floors—for trimmings will be used in the home of the future. And the distribution will be most **GINGERLY** made.

Truly the era of burned clay is near. Take fresh hope, you discouraged clayworkers and **PREPARE** for the day when it comes.



LIGHTNING PLAYS HAVOC WITH CONCRETE.

The "Church Messenger" says: "Fire insurance companies that paid losses on the re-enforced concrete warehouse of the Burlington Blanket Company at Burlington, Wis., some time ago, learned something new about how such fireproof structures should be built. This warehouse was looked upon as one of the most desirable unsprinklered risks in Wisconsin. But when lightning hit it, the current went into the re-enforcing and followed it through the building. The re-enforcing had been simply laid in, without "tying," and here and there it had spread apart. Wherever the circuit was thus broken an arc was formed, and these arcs practically blew the building to pieces. A total loss on building and contents resulted.

HAULING BRICK WITH AUTO TRUCK IN NORTH DAKOTA



Enterprising Concern, the Scranton (N. D.) Brick & Tile Works, Uses Auto Truck to Deliver Brick at Buffalo, 75 Miles Across the Plains. Can You Beat It?

OPPORTUNITIES IN THE CONDUIT FIELD

(Continued from Page 32.)

create new parks as the garden spots of the public, and to maintain boulevards in an artistic fashion, illuminate the retail business district in the best manner possible and decorate home and factory lawns with flowers.

Overhead Cable Unsightly.

The first institution to which the "City Beautiful" worker takes exception is the overhead wire. The big black cable, always unsightly and often dangerous to public life and limb, swaying fifty feet in the air, has received the stamp of disapproval and, like other unpopular features, it is passing out of existence. Oftentimes a central station will delay the improvement of undergrounding its wires for some reason or other, but when the civic improvement enthusiasts get upon its trail and the management realizes that it is offending the better element of the public to which it caters, the line properties go into subterranean depths in the proverbial "three wags of a dog's tail." Thus it is apparent that a number of factors are coming favorably to increase the consumption of conduits among service companies.

One of the easiest things in the world for the clayworker to prove is that the clay conduit is the best and most practicable material for encasing underground electric wires. Metal and fiber are the competitive lines. The qualities of either of these materials do not admit of their use in the field as extensively as clay. In point of price, the clay conduit is strongly fortified. It is not as cheap as fiber and not as expensive as metal. The fiber conduit is not as durable, and it is doubtful if the metal one, subject to the corrosive influences of the earth, is as durable, either. So far as protective ability for its contents goes, the clay conduit reigns supreme. Inasmuch as its materials are themselves of the earth, they show no effect from years of usage. The vitrified surfaces resist moisture perfectly and the inner tempera-

ture is not subject to rapid change, so that the metal strands within the ducts lie in practically the same state the year round. All of these features are distinctly advantageous, appealing strongly to the electrical engineer.

Standard Conduit Dimensions.

The standard clay conduit is three feet long and contains three 3½-inch ducts. The 3-duct type is widely accepted, for streets which are laid with it may be laid uniformly in multiples of three. Conduits are usually encased in concrete, although not necessarily so. The cement foundation is approved in electrical circles, however, for the reason that its construction is economical and affords even greater permanency for the work. The joints are made with a simple wrapping of insulated wire, fully protecting the interstices. Oftentimes a wrapping of heavy felt is placed on the surface of the conduit, which is then wrapped with wire, making the joint tight, air-proof and weather-proof.

The specifications of most central stations in buying conduits are simple. They demand uniform dimensions, and specify that each section shall be hard-burned throughout and salt-glazed on the exterior at least. The average clayworking plant which is equipped for the manufacture of glazed tile or sewer pipe can advance into the conduit field with little additional expense, requiring only a good mould machine to complete its equipment, since the processes of burning and salt-glazing are the same whether applied to tile or conduit.

Consider the extent to which a department of this sort may be developed. Its growth may easily require the establishment of a separate plant catering solely to this important branch of the clay-products industry. The experience of a certain big clayworking company in a Middle

Western city of 250,000 people may be quoted to illustrate the point.

Five years ago it was first suggested to this company that there was money in selling clay conduits in that particular city. The street railway company announced that it would lay underground connections between its main powerhouse and five sub-stations scattered through towns supplying current for suburban lines. There was no one in the local market prepared to bid on the material contracts and it seemed as though the work would have to go out of town. However, the prompt action of the local clayworkers in commencing the manufacture of conduits kept the work from going to "foreign" markets, but, whether or not this may be the case in every city, it is interesting to note how rapidly the conduit business has expanded in this metropolis during the past five or six years.

The railway company awarded its contracts for material and commenced its work of connecting the central powerhouse with the sub-stations by underground wires. The distance from the central stations to the branches was 17 miles in all. A single channel of 3-foot 3-duct conduits was used for each branch. Figuring 1,760 yards to the mile and multiplying by 17 it is apparent that 29,920, or nearly 30,000 sections of conduit were required for this work. When it was completed the railway company was in a position to furnish current to its sub-stations by a transmission system which was the most economical and practical it could devise. Incidentally, a 30,000-piece order was provided for the clayworker.

Inside of a year, the independent telephone company in that city discovered that it was confronted with a city

ordinance requiring all telephone wires underground in a certain section of the city. Instead of stopping the underground work when the retail business district was covered, as ordered by the municipal authorities, the telephone company voted the improvement the best ever and went ahead with the complete improvement of its line properties in this fashion, covering a total distance of 22 miles. This work provided an order for 38,720 3-foot conduits. Just as rapidly as the telephone company adds new subscribers and extends its lines, the underground channels which contain its wires are extended.

The most recent work of this sort undertaken in that city is by a big electric light and power company. The central station owners have realized that they are losing current and money through the maintenance of overhead wires, and they are abolishing them as rapidly as possible. A year or so ago work was begun which is still in progress. When it is completed about 40 miles of conduits will have been laid by this company alone. And 70,400 sections of clay conduit will have been consumed.

Thirty thousand, forty thousand and seventy thousand—that's the way orders run for the conduit manufacturer. Furthermore, when underground improvement is once begun by a public utility, it is rarely if ever at a standstill, for just as surely as the central station lists new customers through energetic advertising it must extend its subterranean wires. The field is certainly one worthy of serious consideration from the clayworker, for it is as capable of development as the general construction division.

FALLSTON FIRE CLAY PLANT CHANGES HANDS



HE plant of the Fallston Fire Clay Co., which is located at Fallston, Beaver County, Pa., has been purchased by A. L. Humphrey, R. L. Wilson and T. P. Cuthbert, well-known Pittsburgh business men, the transfer being effective December 1 last.

Inasmuch as the charter of the old company has been bought with the plant, the new owners will continue to do business under the original charter name. General offices have been opened in the Henry W. Oliver Building, Pittsburgh, Pa., in charge of Mr. Cuthbert, a well-known figure in the Building Brick Association.

Mr. Humphrey, who is president of the new company, is a well known man in Pittsburgh business circles and has attained a position of considerable prominence in the business world. He is vice-president and general manager of the Westinghouse Airbrake Co., of East Pittsburgh, Pa., but is a resident of Pittsburgh proper.

Mr. Wilson is also well known in business circles in Pittsburgh, having until recently held the office of treasurer of the W. M. Laird Shoe Co., of Pittsburgh. He will be vice-president and treasurer of the Fallston company.

Mr. Cuthbert was a former resident of the eastern territory and came into the Pittsburgh field several years ago to assume the management of the Pittsburgh office of the Toronto Fire Brick Co., of Toronto, O. He was practically sales manager of that company, and as a side issue did a large brokerage business in building and fire brick. He has also taken an active part in the councils of the Building Brick Association, and at the last annual meeting delivered an address on "Publicity." Mr.

Cuthbert will be secretary and general manager of the Fallston company.

The new owners of the plant will operate the property to its fullest capacity, and they are now working on a new line of building and face brick, which will be known as a new type of iron-spotted or brown-mottled brick.

These brick, although made by the stiff mud process and thoroughly vitrified, nevertheless possess the same snappy effect as similar colored dry press brick, showing a very bright, pinkish or golden brown tone in the background and very strongly marked with iron spots.

The process used to produce these new color effects in the impervious iron spot brick is a new one and was developed by Mr. Cuthbert after numerous experiments covering a period of several years.

The Fallston Fire Clay Co. is one of the best equipped brick plants in the country, over \$40,000 having been spent for new improvements, machinery, etc., during the past year.

The plant is operated throughout by electricity the clay being drilled, crushed, conveyed to the dry pans, ground and made into brick entirely with this power. Numerous labor-saving devices have been installed, which in many instances have more than cut the labor used in half.

The three dry pans, two brick machines and cutting tables, each with a capacity of 60,000 brick per day, give a total capacity of 120,000 brick per day. This capacity is cut down, however because of there being but thirteen kilns and facilities for drying but about 85,000 brick per day.

The new owners are planning to build a number of new

kilns and to add to the drying capacity during the winter months, and other improvements to be added will make this among the largest plants in the country making this type of brick.

Mr. Humphrey's varied interests will prevent his taking an active part in the management of the new company, save in an advisory way.

Mr. Wilson will have charge of finances and Mr. Cuthbert of production and sales.

It has often been said the brick business needs some

year ago, and on December last it was sold to its present owners.

The plant has been used exclusively for the manufacture of high-grade facing brick and radial chimney blocks. All the facing brick put in the Pittsburgh & Lake Erie Terminal station at Pittsburgh were furnished by the company. The business was not entirely confined to this district, as 50 per cent of the output was sold in New England.



A. L. Humphrey, Pres., Fallston (Pa.)
Fire Clay Co.

big men, and Mr. Humphrey is of this type, and as he is taking a great deal of interest in the business, he will without doubt prove a valuable addition to the industry. This plant is located on the Pittsburgh & Lake Erie Railroad, a branch of the New York Central lines, where it owns 25 acres of surface ground and the underground rights of clay and coal under an additional 80 acres. The factory occupies a site 50 by 96 feet, and the four-room office building is a commodious two-story building. The kiln battery is composed of thirteen 30-foot downdraft beehive kilns.

The two veins of fire clay lie in a hill adjoining the site owned by the company. The clay, which is fat and plastic, and not very sandy, is mined by the aid of a Jeffrey electric drill, used with a Croker-Wheeler motor. The complete equipment of clay cars was made by the Cleveland Car Co.

The clay is air slacked and then stored in bins adjoining the dry pans. There are three pans of the Stevenson type, each with a capacity of 100 tons. The clay is tempered in two 14-inch pug mills of the Stevenson horizontal type.

The brick equipment of the plant consists of two brick machines of the auger type, each having a capacity of 60,000 brick per day. One man is in charge of each machine, aided by four off-bearers. The elevators are of the all-belt conveyor type, each being electrically driven with an independent or individual motor.

The eleven-tunnel drier, which was built by the C. W. Raymond Co., is heated by hot air, no fans being used. The average time for drying is 12 hours.

The first Fallston plant which was erected in 1888 was destroyed by fire in 1910. It was speedily rebuilt, however, and was again placed in operation by its former owners in 1911. Operations were resumed November, a

PUBLICITY SCHEME BRINGS BUSINESS.

Trip of "Made in Pittsburgh" Train Results in Many Inquiries for Brick, Resulting in Good Orders.

Over three hundred inquiries concerning the brick manufactured by the Pittsburgh-Buffalo Coal Co., of Pittsburgh, Pa., were made to the representatives of the company who took part in the trip of the "Made in Pittsburgh" train, which crossed the continent several months ago. Many inquiries have already resulted in orders.

The company built the brick mantel, shown in the il-



Brick Mantel in the "Made in Pittsburgh" Train, Which Traveled 5,076 Miles.

lustration, in one of the large steel express cars, making up the train. The gentleman sitting in the chair is T. P. Jones, vice president of the company. Photos of other officials of this company are shown on the mantel shelf.

James W. Wardrop, who represented Mayor William Magee of Pittsburgh on this train was in charge of the Pittsburgh-Buffalo exhibit.

This "Made in Pittsburgh" train traveled 5,076 miles, was out eighteen days and visited 35 cities.

The trip was so much of a business success that another trip will be made next year into a different part of the United States.

According to Government reports, the value of the imports of clay products in 1911 amounted to \$10,804,749, a decrease of \$548,592 from the value in 1910. Of these imports pottery formed the greater part in 1911, having a value of \$10,638,616, the remainder being divided among brick, fire brick, tile, etc. The pottery imports decreased \$492,542 and the brick imports \$56,050 from the imports for 1910.

The exports of domestic clay products were valued at \$3,665,720, an increase of \$1,021,118. Brick and tile exports gained \$661,441 and pottery exports \$359,677.

SALESMANSHIP—ART OF SELLING BRICK

(Continued from Page 34)

duce or educe the *five mental states* in the mind of his customer, which *must* be produced there in *some* way before any sale is consummated, he will find that *the goods* are the central stimulus of each and all of these five mental states:

1. *Attention* must be focused on The Goods, and it must be real and not sham or divided attention—the difference between which the salesman must clearly understand. Attention focused on anything else but the *goods* is waste time and energy.

2. *Interest* must be aroused in *the goods* and not side-tracked upon the salesman.

3. *Confidence* must be established in *the goods* as represented; and on this

4. *Desire for the goods* will naturally awaken, soon followed by

5. *Decision to buy* (not the salesman; but) *the goods*.

These mental stages or states will not be induced, you observe, by any psychological trick or hypnotic art of the salesman, but by logical and discriminatingly presenting facts—points, points, points—by exhibiting the real qualities and relations of *the goods*.

This Principle of Salesmanship rests directly, squarely, and immovably upon

The Five Essential and Fundamental Elements of Merchandising.

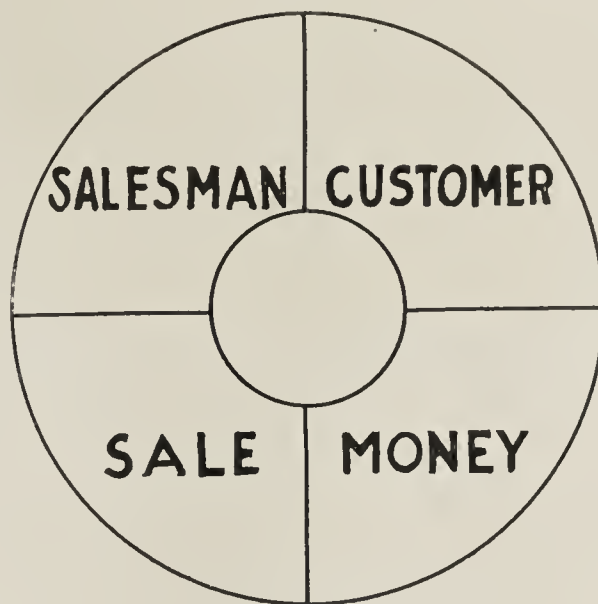
The first buyer mentioned in the Bible was Abraham; those who sold to him were the inhabitants of the Gentile lands through which he journeyed; the goods he bought from them were human beings, the male servants of his household and retinue; the price he paid was 400 shekels of silver. Here were the five elements:

These five are two persons, two things, one transaction,

five elements appear. Whether we sell a ribbon or a railroad, a piano or a palace, an idea or a group of them (a book) the same fundamental elements appear.

Whether it be a bathroom equipment, or only a soap-dish; a complete heating contract or a new hot water heating coil; the same condition exists. And it makes no difference whether it is merchandise or labor you are selling, or both. The goods you sell may be in your own stock or in a warehouse five hundred miles away. You may sell for cash, or on time. You may deal through an architect, or general contractor, or with the owner direct. But these five elements must be there.

These five are absolutely and fundamentally essential. No merchant can drop out any one of these five elements and yet do business.



Has a store ever had the salesman, customer, money and sale, without the goods? Never!



1. The salesman.
2. The customer, or the man who bought.
3. The commodity—slaves.
4. Price paid, or the measure of value and the medium of exchange.
5. The deal, transfer of goods for value received, completing the transaction.

In the act of selling even a paper of pins, the same



Ever had a customer, goods, money, and sale, without the salesman? Never!



Ever lived the salesman, goods, money, and sale without the customer? Never!



Ever conducted business with the salesman, goods, customer, and sale without the money or its equivalent? Never!



Ever had this:—Salesman with his goods, customer with his money, but no sale? If you have ever experienced this, where do you really think the trouble lay? In the customer? Was the customer at fault? Or the goods? Or the salesman? Where, in most cases do you *think* the fault would lie?

You see then, not a single one of these five things can be dropped and yet have a sale result. Therefore, all

of them are elements—essential elements in salesmanship.

No sixth essential element can be thought of. When you give this question serious thought you will discover that no sixth essential element can be found. *Anything to which nothing can be added, and from which nothing can be taken, must be perfect.*

There is therefore a perfect analysis and a complete classification in the five essential elements of salesmanship, salesman; commodity, customer, money and sale, or merchant; merchandise, customer, money and exchange.

All the knowledge existing in the brains of all business men pertaining to the getting and building of business, can be grouped around those five things. Every idea, fact, experience, law and principle, will find its logical place under one or another of those five heads. See, then, how far-reaching, firm and fundamental a foundation is laid in this classification. Plant your feet upon it and view all the mercantile landscape over from that standpoint, for you will never have to change it. It will be just as true and unchangeable one hundred years hence as it is now.

Merchandise, the Center of Merchandising.

Of these five fundamentals logic would admonish us to study the most important first.

From one standpoint, all are equally important.

We shall, however, centralize the goods, for the reason that the Merchandise is the Center of Merchandising.

The world is searched for Merchandise. Railroads and steamships bring it, or its elements (raw materials). Salesman and Customer are brought together by it; for we cannot have a Sale without the goods, but we can have the goods without the sale. Buying is simply one method that customers have of getting the goods, but it is the *only* method, for we might make a commodity ourselves. Of course, it is impossible for one person to make all, or even many articles. But under no condition whatever, actual or conceivable, can we have an exchange or sale without goods. If the goods are not the most important, they are at least the *centre* of the whole business. In a circle the circumference may be just as important as the centre, but in drawing a circle we commence with the centre and make it the base from which we view and measure everything else in the circle. The customer agrees to the sale in order to *get the goods*. He does not agree just for the sale itself. The sale is simply an abstract transaction to get possession of a concrete thing, and this concrete thing is the *main thing*.

Is the musician the centre, or the music? Is the scientist the centre, or the science? Is the architect the centre, or the building? Is the painter the centre, or the painting? Is the actor the centre, or the acting? Is the merchant the centre, or the merchandise?

Does not the musician "stand" on his music? the architect on his building? the painter on his painting?

To make the personalities the centre leads to man-worship or hero-worship, and not to art-worship.

The centre of merchandising is not the merchant, but the merchandise.

If the music is poor, can the musician endure? If the science is wrong, can the scientist maintain himself? If the building is weak, can the architect live? If the painting is a daub, can the painter succeed? And if the goods are below par, can the merchant continue business? We see, then, that the product, and not the producer, is the centre of business and art.

The salesman, customer, money, and sale rest upon the goods—rest heavily upon them.

SALESMAN	CUSTOMER	GOODS	MONEY
SALE			

Everything Does Not Rest Upon the Sale—

SALESMAN	SALE	GOODS	MONEY
CUSTOMER			

Nor Upon the Customer—

CUSTOMER	SALE	GOODS	MONEY
SALESMAN			

Nor Upon the Salesman—

CUSTOMER	SALE	GOODS	SALESMAN
MONEY			

Nor Upon the Money—

SALESMAN	CUSTOMER	SALE	MONEY
GOODS			

But Rests Heavily Upon the Goods.

If the salesman plants himself squarely upon this centre and views everything, himself included and his work, from this central standpoint, the whole system of salesmanship and his great part in it swings into rhythm, his power in salesmanship immediately and subtly increases—a fact we shall clearly perceive in the articles to follow.

As a practical illustration of the real power inherent in this one central Principle, I will conclude this article with but one practical application, which refers to

The Satisfaction of the Customer.

To make a sale and an enemy by one and the same transaction is poor business.

"It is vitally important that the article sold should leave the customer in a mental attitude of satisfaction, or the sale would better not have been made." (J. H. Appel).

Nothing short of satisfaction ever seals a sale.

If the salesman's manner shows he is anxious to make a sale simply for *self-interest*, it will awaken distrust in the mind of the customer. But if the talk is all along the line of the value the goods and workmanship will be *to the customer* the whole proceeding assumes a different color and a brighter hue, and even if nothing is bought there is a good taste left in the customer's mouth that is likely to draw him back again for another nibble; and that next time he may bite, and buy! and thoroughly enjoy the charm and usefulness of the goods.

Selling Small Articles.

The satisfaction of the customer does not necessarily increase with the size or price of the article. You can make as pleasing an effect upon the mind by the sale of a feather as of furniture, by a box of powder as by a grand piano, by a jacket as by jewelry.

A wise student of business tells the following incident: "A salesman in a store went to a great deal of trouble to get a certain kind of button I wanted, an item worth only five cents. I was much impressed with the spirit in which he took the trouble to satisfy such a small demand, and I said to him: 'You are certainly very kind.' 'Not at all,' he said; 'that's what I am here for.' 'I'm afraid your business doesn't grow very fast from orders like that,' I said. 'Perhaps not,' he said, 'if you count only the profit on the first transaction. But I have seen a great deal of business grow out of smaller things than that. I can count ten good customers who came on the recommendation of one man I once went to a little trouble for. And I found two of my best friends among the newcomers. It is often that way. A man drops in here and is well treated, and mentions it to his friends, and they mention it to theirs, and *so business grows*. It is like planting a grain of wheat. It may bring forth a whole head, and that planted again will bring a head for every grain, and so on. You can never tell where it will stop. I like to think that every little transaction is a grain of wheat that I am planting, and that it is worth all the trouble it costs, for it may bring in a big harvest some day."

The *quality of a sale*, then, has as much to do with building business as the *quantity*. And quality resides in the *degree of satisfaction* produced in the customer.

So then, talk everything from the *customer's* standpoint. Think of *him*—not of yourself. Imagine what service the article will render him (or her), how much pleasure *they* will get from it, etc. Forget self entirely; be possessed (I had almost said obsessed) with the idea of the customer's gain and satisfaction in the goods, in the service rendered by them and by your own good workmanship.

INSTALLS MODEL PRISON PLANT

**Ohio Engineer and Practical Designer Erects Ideal
Brick Manufacturing Establishment for
Michigan Penitentiary**

The new brick plant now being erected by the state officials of the Michigan State Prison at Jackson, Mich., is considered by brickmakers as one of the model plants of the country. It was designed by George B. Drennan, secretary of the Ohio Tile and Clayworkers Association, and secretary and treasurer of the J. D. Fate Company, of Plymouth, Ohio.

Mr. Drennan is one of the best known men in the clay-products industry. There are few that have attended the



George B. Drennan, J. D. Fate Co., Plymouth, O.

various national conventions but what know him for he has been a regular attendant at all sessions.

It also has been said of Mr. Drennan that he has actually visited more clay plants than any other man in the field. Whether this is literally true or not cannot be said, but it is a fact that he has been connected with the clay-working business in various capacities for the past thirty years and during that time he has visited practically every section of the country scores of times.

Mr. Drennan was one of the first in the dryer game and constructed a number of outfits all over the country years ago when the dryer was a new proposition and there were but few in the country. Of late years Mr. Drennan, however, has been connected with the selling and installation of machinery, in his capacity as an active official of the J. D. Fate Company, and has turned his attention especially to the designing of plants.

As a practical designing engineer he has found an unusually profitable field. His long experience as a practical clayworker, his experience in the dryer field, his experience in the selling and manufacturing of machinery and a thorough course in theoretical and practical civil engineering, equip him unusually well for the work.

The practical end of Mr. Drennan's work is what appeals to most clayworkers. For instance, a clayworker in Indiana recently called upon him for advice. He spent half a day at the plant and suggested a re-arrangement of the plant which not only increased the output materially but reduced the labor by 14 men.

Mr. Drennan has complete charge of the engineering departments of the J. D. Fate Company and might be considered one of the direct assets of the concern.



NEW BELTING COMPANY IN FIELD

R. & S. of Cleveland Announce Revolutionary Methods in Seeking Clayworkers Trade

The R. & S. Belting Co. is an Ohio corporation, the active forces in control of which are W. Reece, of Cleveland, Ohio, and L. P. Shafer, of Canton, Ohio.

W. Reece is a graduate engineer with many years practical experience in power transmission, elevating and conveying. To this work he has devoted his entire effort and made himself, without question, one of the leading experts in these lines, and there are today many clay-working plants that have a reduced production cost due to his solving their problems in handling material.

L. P. Shafer has had practical experience and for 20 years has been connected with the largest clay working plants of the country. His practical knowledge as a brick manufacturer must certainly be a large factor in the success of the R. & S. Co.

It would appear to the layman that the use of the term "engineer" in connection with belting is to belittle the profession, but, after a careful study of all points involved, we are certain that belt users will do well to listen to the "Whys and Wherefores" as put before them by this company.

We are sorry that we cannot in this issue publish a technical paper on the subject of specialized belting, but Mr. Reece has promised to write one for an early issue, and we shall most certainly hold him to his promise, as we know it will be of interest to our readers.

The R. & S. Belting Co. insist that one or two styles of belt will not consistently meet the many conditions that arise, as they maintain that successful service for the user can only be attained by putting up belts of special construction and treatment for the work they are to do. Their various constructions and treatments, and the combinations made possible must certainly appeal to the user.

HE NEVER ADVERTISED.

"There was a man in our town,
Thought he was wondrous wise.
He swore by all the fabled gods
He'd never advertise.

Alas! one day he advertised,
And thereby hangs a tale;
His ad was set in 6-point type
And headed 'Sheriff's Sale.'"

CLAY WORKERS URGE SPENDING MONEY FOR PUBLICITY

(Continued from Page 8.)



H. L. Matz, Vice Pres., S. S. Kimbell
Brick Co., Chicago, Ill.



H. C. Kleymeyer, General Manager,
Standard Brick Co., Evansville, Ind.



F. E. Keeler, President, Mason City (Ia.)
Brick & Tile Co.

not see why this isn't all right, as the more paved roads we get the more the people want."

No Profit in Price Cutting.

Sunderland Bros. Co., Omaha, Neb.—"The brick business, west of the Missouri river, has been very satisfactory from the standpoint of volume during the past year. Profits, however, have not been entirely satisfactory, in that competition has been unusually keen with more or less price cutting. Cutting prices in face brick does not benefit any one in the trade, as a 50-cent or \$1 per M. cut in face brick does not influence building construction, nor does it benefit the owner, proportionately as much as it injures the seller. A building requiring one hundred thousand face brick is not promoted by a reduction of fifty or one hundred dollars in the cost of the face brick required, while the same amount of money is a big factor in the seller's loss and gain account for that one order.

"Our greatest trouble this year has been to get shipments from the factories supplying us with their face brick, and this condition, in our experience, extended from Ohio into the gas belt of Kansas. Whether or not the various brick plants expected a slump due to the presidential year or not, and, thereby, proceeded with the manufacture of stock very cautiously and were, therefore, swamped with orders, to fill which they had to first manufacture the brick, creating a delay in making prompt shipment of orders, I am unprepared to say. Nevertheless, it would appear as if previous slumps every fourth year were totally unnecessary and simply a matter of lack of public confidence. At least, the indications of this year would so prove. In many instances, our shippers claim a decided shortage of cars for shipment, but our experience has been more a shortage of brick than a shortage of cars.

"We believe the demand for face brick in 1913 will establish a record. Nebraska produced more grain this year than ever before in her history, therefore our farmers are all prosperous, in which prosperity this entire section shares. When our farmers are prosperous, they vote

bonds for new school houses and new court houses and contribute freely to the erection of new churches and public libraries, and, at the same time, build for themselves brick residences, which method of construction we have, during the past three years, advertised extensively, distributing "Building Brick Association of America" literature freely besides buying space in our daily papers, having a circulation throughout our territory."

Yards Working to Capacity.

James Lochre, Brick Manufacturer, Toronto, Can.—"I had the pleasure of attending the Chicago Convention and also the Clay Show at the Coliseum last year and I found both very interesting and instructive. I have succeeded in getting the promise of a number of the brick manufacturers here to attend the convention and exposition this year. Would also ask you not to overlook to set forth in your next issue that the Canadian Clayworkers' Convention will be held in Toronto at the Prince George, a four days' convention, starting Jan. 14th and ending on the 17th, for which a good, interesting program has been arranged, much on the same plan as the Chicago convention, only a little better.

"We are like all the brick yards in the Toronto districts viz., working to the full capacity and behind in orders. We made over 14,000,000 this year with four machines, and our drier is now turning out 50,000 a day. This places us in a much better position to take care of our own trade.

"The reason of the great demand all over Canada for brick is the natural growth of the country. The reports from all over Canada show a big shortage, so this next year should be just as good, if not better, than this past season. We wish your journal the success it deserves."

F. E. Keeler, president, Mason City Brick & Tile Co., Mason City, Iowa.—"The demand for clay products for the season of 1912 has been very satisfactory and considerably in excess of 1911, although the prices have been very low. In my judgment the manufacturers have not

secured within 10 or 15 per cent of what their goods were actually worth or would sell for.

"If the clay product manufacturers used half the money in promoting the sale of clay products that is spent by the cement associations, I do not think it would be possible for the clay product manufacturers to supply the demand even at considerably better prices. There is practically no limit to the use of clay products and no modern building of any kind can be built without them. This can be increased several hundred per cent by educating the public in the various uses to which clay products can be put to, the cheapness and durability of same.

"The Clay Products Exposition of 1912 was a start but did not receive the encouragement and support it should have from the clay producers. We are gratified indeed that there is to be another Clay Product Exposition for 1913 and know from our own experience that this should be of unlimited benefit to clay producers and sincerely trust the manufacturers will heartily support the 1913 show.

"In a way there are too many mud-mixers or stand-patters in the clay business and not enough business men, who are progressive and will spend a few dollars without seeing 100 per cent profit coming back into their pockets within the next thirty days. We aim to make good goods, charge fair prices and advertise.

"Best wishes for a prosperous New Year."

Looking Forward to Chicago Show.

Wm. Hanley, President, Bradford Pressed Brick Co., Bradford, Pa.—"I have been in the West on business most of the year and, therefore, am not in as close touch with the brick business as would have been the case if I had been in the East. Speaking as a whole, the brick industry is in good condition throughout this territory. The manufacturers of common brick in Western Pennsylvania and Western New York have been able to market their year's product at a price considerably better than the average price secured during the last five years. Buffalo and Rochester have enjoyed an active building boom during the past year with the result that there is a scarcity of common brick throughout this entire section.

"The face brick industry has not fared as well, proportionately, as the common brick industry, but we have been helped materially, because of the fact that a number of plants, formerly making red building brick, are now engaged in the manufacture of paving block.

"The State of New York is spending a very large sum of money annually in constructing good roads with the result that paving block have been in demand throughout the entire year. We have been running continually on building brick during the entire season and have been short of brick throughout the entire year. Indications are that we will just about catch up with our orders by January 1st, and if we have an open winter our shipments will continue good throughout the entire year.

"I am especially pleased to note that 'Red Brick' are enjoying the confidence of the architects and the public to the extent that all manufacturers, making a high grade red brick are able to sell their product at fair prices.

"Indications are at the present time that 1913 will be a good year, and all brick manufacturers in this section seem to be confident that during the next few years we will enjoy good times in our own particular industry. We are looking forward with interest to the convention of the N. B. M. A., which is to be held again in Chicago and believe that the Clay Products Exposition for 1913 will be a marvel. Trusting that 'Brick and Clay Record' will

continue its prosperous career, you have our best wishes for a Merry Christmas and a Happy New Year."

Sebastian Bockting, St. Meinrad, Ind.—"I have read 'Brick and Clay Record' for about twenty years and I would not be without it. I have been in the brick manufacturing business for the last 26 years and since last spring I have been in St. Meinrad, Ind. We make enough brick and drain tile to supply the home people, as we have not yet the railroad close enough to ship ware out, this is inconvenient. I have the finest kind of clay for brick and drain tile I have ever seen. We have reached a depth of 15 feet, and we find the lower clay is better than the upper. It burns red and has no hard material in it. We take it from the pit, put it through a rolling crusher, then through the auger machine and it comes out as smooth as shale, which is ground and screened. It makes a very nice black or fire flashed face brick, which is as hard and tough as a shale brick. Our plant is located on the Anderson river, consequently have plenty of good water. The hills along the Anderson have coal veins, from 3 to 5 feet deep. The coal is the best I have ever burned. We can get all the cord wood we want, costing nothing, except for the hauling."

Louis Campbell, Sec. and Gen. Mgr., The Red River Valley Brick Corporation, Grand Forks, N. Dak.—"About this time last year I wrote you that from our point of view it looked as if 1912 would be the poorest year since 1907. That has been exactly our experience in this state and Northern Minnesota, but I am very much pleased to state, at this time, that from present indications, 1913 is going to be the banner year since 1906, and from our point of view it looks as if the amount of building done next year will depend a great deal on the ability of the dealers to supply the materials."

Firm Believers in Publicity.

I. R. Miller, Gen. Mgr. Denny-Renton Clay & Coal Co., Seattle, Wash.—"Business has been rather dull on the Coast the past eighteen months, although there has been a tendency toward improvement the last three months. We believe that the general slump in business has been almost world-wide, and that the Northwest has perhaps not been affected as much as some other sections.

"Our part of the country is getting ready for the opening of the Panama Canal, as is the whole Coast, and we look for a steadily increasing demand for our products from now on. The rainy season has now begun, so that we expect the usual falling-off in business characteristic of this season of the year. We are manufacturing moderately at our various plants. Our paving brick plant is not operating at quite full capacity, and one of our sewer pipe plants is shut down.

"We are firm believers in advertising and publicity, and have been very glad to note your aggressive campaign. The man of the crowd generally sees the thing he knows the most about. When he decides to build, if he has a lot of information in the back of his head about cypress and concrete which has been placed there every month by the advertising in the back of the popular magazines, he is pretty sure to look up cypress and concrete when he builds. Whatever he studies interests him, with the result that his interest in the advertised products is quite likely to induce him to purchase them, rather than something about which he knows nothing. We, therefore, hope to see the good work go on with increasing vigor."

Oklahoma Breaks Crop Records.

Edmund Frantz, president the Enid Vitrified Brick and Tile Co., Enid, Okla.—"The brick business in this section has been unusually quiet the past twelve months—only

a few buildings here and there throughout the country towns, such as churches and school buildings and an occasional store room have been built to replace frame buildings destroyed by fire—so that the year just closing was a quiet one and very unprofitable in the brick business, but conditions are changing and there is an increasing demand for brick and other building material. Oklahoma has harvested the largest crop in her history, exceeding that of either Kansas, Nebraska, Missouri or Arkansas, and improved trade conditions are in marked contrast to those of a year ago.

"We expect to have a good year's run with our plant here at Enid and will probably increase our capacity in the early spring. At present we make only 30,000 dry press brick per day and find a ready sale for them in season. We will begin manufacturing again immediately after the holidays and think we will be able to operate steadily throughout the year, depending somewhat of course on next season's crop prospects, which at present as far as the winter wheat is concerned is the best Oklahoma has ever had. The building of silos is just beginning in this section and some tile drainage projects will open a new field for the clay industry in the near future.

"As a rule, many of our young cities have over-built, which has caused a depression from which they will be slow to recover. The price of putting brick into the wall also militates against the use of brick for small cottages and modest residences of various sorts and works a hardship on brickmaking here as elsewhere. If brick-masons drew the same wages as carpenters and other first-class mechanics we believe that nine out of ten of all buildings of whatever kind would be constructed of burned clay. The climate here is very severe on all frame structures coated with paint and their upkeep in consequence plus the extra insurance rate would give the brick manufacturers an advantage which they well deserve."

C. E. Whitney, Manager Hedrick Brick & Tile Works, Hedrick, Iowa.—"We are glad to say that we appreciate 'Brick and Clay Record' very much and we believe it is doing a good work for brick and tile men all over the country. We wish especially to compliment you on your

exposure of the rank failures of cement in every form. There is no doubt of its failure in drainage tile, and the writer knows of two cement tile plants that have quit business for the want of some one foolish enough to buy their goods. The tile business is just a little slow in southeastern Iowa for the reason it was quite dry in this part of the state this year, but with the bumper crops all over the state we are looking for a good trade in the spring.

Hollow Tile Construction Growing in Popularity.

R. L. Gamewell, secretary, North Birmingham Fire Brick and Proofing Co., North Birmingham, Ala.—"The fireproofing business has been exceedingly good with us throughout the entire year, and from present prospects the coming year will prove to be a record breaker. During January of this year, we published a very neat catalog, in which we featured residence construction of hollow tile fireproofing, and we are very glad to say we have furnished tile for quite a number of residences throughout the South this season. Our business in this particular line is daily increasing, and in a few years we hope to see thousands of dwellings erected of hollow tile. We receive 'Brick and Clay Record' regularly, and always find valuable information in same. We extend best wishes for its continued success."

J. C. Steele & Sons, Statesville, N. C.—"We are glad to report that our business is constantly increasing. Brick-makers have had the best year in the history of the industry and are feeling good about the future of clay products. We are booking orders at a lively rate and have had to greatly increase our force. Our foreign trade is increasing and we have made extensive shipments to South America and New Zealand, recently. We are bringing out some new machines of still greater strength and capacity along the lines of the single-gear principle which we have advocated so persistently for a good many years, and we are sure we will have all the business we can handle in the new year."

No Brakes on Wheels of Progress.

J. E. Carson, president, Carson Brick Co., Charlotte, N. C.—"As the year draws to a close it reminds us that our subscription does likewise, and we are enclosing \$1.00 to renew for a year. It would be putting it mildly to say

BRICK POPULAR FOR SUBURBAN STATIONS



Up-to-Date Suburban Depot on C. B. & Q. Ry., at Downers Grove, Built of Brick with Tile Roof.

we appreciate your magazine; it is a wonderful thing—the greatest value for one dollar that we have ever heard of. We do not see how you manage it, but, coming regularly twice a month, is evidence that you do. Good luck to you, and the season's greetings.

"A few words about the past year may be of interest. Some of us suffered from floods during the early spring. Aside from this the majority have had the best year this section has experienced for many years. We think that it will measure up to the best of them. The demand has been good and the prices ruled slightly higher than usual. Everyone has had all he could attend to. The demand is still good, and the new year gives promise of being the best of all. This section has enjoyed an unusual spell of very fine weather, which was good for crops as well as for the 'summer yards,' and all are happy. The merchants are having a good trade and collecting past due accounts. The elections are over and there seems to be little to put the brakes on the wheels of progress.

"To mention our own affairs would be to relate a tale of woe. People don't want to hear about other's troubles, at this season of the year. They have theirs. Want to say that we expect to have a 'banner' year, and wish all others the same."

Cost of Bricklaying Should Be Reduced.

Eb. Rodgers, secretary and treasurer Alton Brick Co., Alton, Ill.—"Our business has been very satisfactory, as a whole, during the past year. There has not been as much street paving in this immediate vicinity as we would like to see, but the prospects for next year seem to be much better.

"We wish you success in your endeavor to arouse the brickmakers to the importance of a publicity campaign. In our opinion one of the most important propositions on which you have touched, is the relation between the brick manufacturer and the bricklayer. We believe if the restrictions placed upon bricklayers were removed, that the cost of brick work would be materially reduced and the rate of consumption wonderfully increased. There need be no reduction in wages, but simply a spirit of co-operation on the part of the bricklayer to do a fair day's work, by laying the proper amount of brick.

"We hope you will continue to discuss this subject and awaken the interest of the manufacturers to such an extent that some effort will be made to bring about better conditions in the bricklaying end of the business."

F. Plumb, president Streator Paving Brick Co., Streator, Ill.—"We started in the present season with a plant which had been enlarged during the winter so that its output was increased about 50 per cent. We have enjoyed a season of activity, having sold all the yard stock by the middle of the season, and continuing after that to ship practically the entire product directly out of the kilns. We have some unfilled business still ahead of us, and altogether we have found the season a very satisfactory one.

"We can say nothing as to next year's outlook except that we believe it will be a prosperous and busy year generally throughout the country, in which all industries will share. We can only hope to get our share of this business."

Industry Needs Publicity.

Jno. S. Ringle, president Wisconsin Clay Manufacturers' Association, Wausau, Wis.—"Manufacturers of clay products have good reason to appreciate your work in the interest of the clay industry. The consumption of clay products in this vicinity during the past season has been normal. While the regulation of shipping rates has given manufacturers in Wisconsin a wider market, it

is yet apparent that the industry needs publicity. It appears to me that it should be the policy of every manufacturer to carry a constant reminder of the superiority of clay products in his local newspapers. The public must be constantly reminded of the fact. Conditions favor a larger and constantly increasing demand of clay products for its various purposes, but in this age of exploitation it is necessary to keep it before the people—that there is no substitute for burned clay for building purposes."

Appreciate "Brick and Clay Record's" Progressiveness.

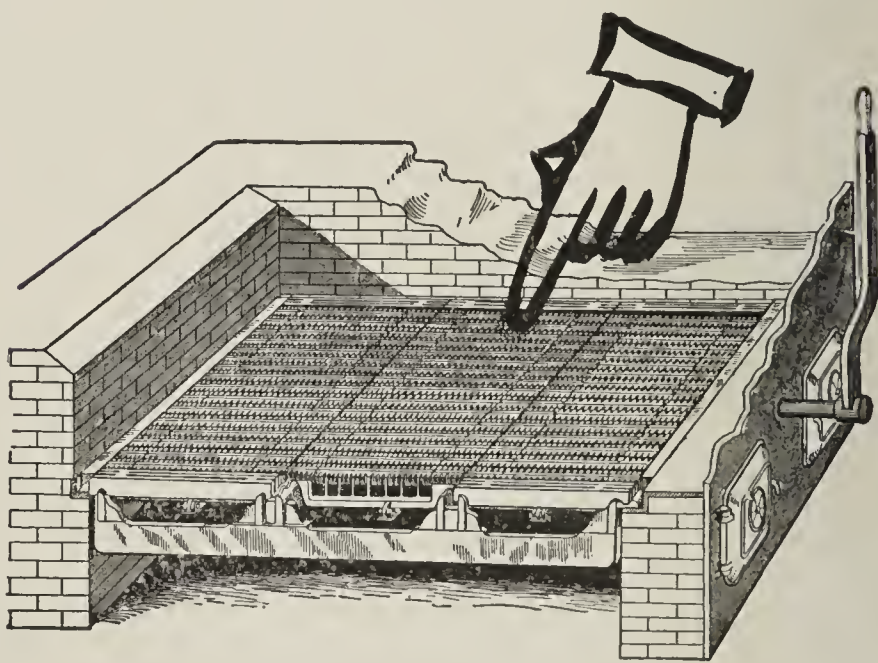
H. C. Kley Meyer, general manager Standard Brick Manufacturing Co., Evansville, Ind.—"Owing to the long winter and late spring of 1912, business was so slow in starting that we are considerably behind 1911 in our deliveries, but on the whole we can not complain as business was good after it once got into motion. The prospects for next year look promising and we are preparing for any emergency by installing additional equipment, which will increase our daily capacity by 75,000 brick.

"We congratulate 'Brick and Clay Record' upon its progressiveness and upon the energetic way in which it has undertaken to help brick manufacturers come into their own by emphasizing the use of publicity. We wish you many more years of prosperity and hope that your efforts in their behalf will be duly appreciated by the brickmen."

MARTIN ROCKING GRATES.

Ten Years' Successful Usage in Steam Plants Is Their Own Best Recommendation.

The use of the Martin anti-friction rocking grate for clay plant usage for the past ten years under all types



of boilers, using all kinds of coal, is the best evidence of its usefulness. Its makers claim that where plain grates are used, a serious loss of fuel and steam occurs from the necessity of constantly opening the doors to tend the fire. The admission of cold air is obviated by the use of the Martin grate. Catalogue No. 18, recently issued by the Martin Grate Co., Fisher building, Chicago, explains the system in full and contains besides some 37 pages of testimonials from satisfied users of the Martin grate. A folder, which the company also issues, gives the names of a large number of firms which have sent testimonial letters as to the economy, efficiency and durability of this grate. These catalogues may be obtained by writing the company at the above address.



THE FINEST KILN.

California Burner Declares Continuous Kiln Best for All Purposes—Effects Saving of Fuel.

With the continual increasing cost of fuel, the manufacturer of burned clay-ware must look for methods of drying and burning that combine fuel economy with efficiency, as manufacturers in all other industrial lines have been and are doing.

In the development of oil-gas in California, where the Jones oil-gas burning system is used, it was observed that the method of burning oil with air of combustion at atmospheric temperature was so wasteful, and caused such a deposit of lamp-black, etc., that if a decided improvement could not have been made, the gas-oil method of burning would have been abandoned. The principal improvement came with raising the temperature of the air of combustion to a high degree, and also heating the oil to some 150°F.

Air at a high temperature has more affinity for fuel, than air at atmospheric temperature, hence: Increased ratio of combustion results. The intensity of a flame in fuel-burning may be affected by the proportionate amount of primary to secondary air. By the terms primary and secondary, we mean air at atmospheric temperature and air at high temperature respectively. An intense flame is caused by the use of primary air, while with the increased use of the secondary, a more "lambent" flame is produced.

In the burning of clay-ware an intense flame is very damaging to most kinds of material, which are usually protected from the intensity of a direct fire by the construction of "bags" or "bag-walls." By the use of these walls, the flame which enters into and among the brick, or other ware being burned is "softened." A bag therefore is a furnace in which a thorough "mix" is obtained and the higher the bag wall, the more "lambent" will be the flame at the top of the combustion chamber. As a natural consequence, the higher the bag wall, the more difficult it will be to direct the proper amount of heat to the bottom of the kiln, without damaging the clay-ware at the top.

With air for combustion at high temperatures, the "bag wall" furnace is unnecessary as a "lambent" flame may be produced without the "mixing" chamber, as for instance in the ordinary continuous kiln.

The theoretical amount of coal necessary to burn 1,000 brick (6,000 lbs.) is 185 pounds. In the continuous kiln it will require from 200 to 350 lbs. except at places where the clay contains considerable combustible matter, as the Chicago clays, for instance.

In comparing fuel-oil with coal, as regards heating qualities, it will require from $\frac{1}{8}$ to $\frac{1}{2}$ bbl. (42 gallons to one barrel), to burn 1,000 brick in the continuous kiln with proper furnaces.

In the producer gas-fired continuous kiln, some 350 lbs. of coal are required to burn 1,000 brick, including of course the amount of coal necessary to produce the gas. In using oil for the manufacture of gas for continuous kiln firing it will require some 28 gallons, per 1,000 brick. The difference between the amount of fuel used in "direct"

and "gas-firing" lies in the primary burning to carbon dioxide of part of the fuel in the producer, or in the heat required to make the gas.

There, with properly constructed furnaces for direct-firing, using the air for combustion at a high temperature with fuel fed continuously in small quantities in a finely divided form, we have a kiln that is cheaper to construct, easier to operate, and more efficient from the successful manufacturers point of view, than any device heretofore used for the drying and burning of clayware. Such is the continuous kiln.

California Burner.

TO OVERCOME LIME.

Throwing of Ammonia Salts in Fire Suggested as Remedy For This World-Old Difficulty.

Of methods for overcoming the effects of lime in clays there appears to be no end. One of the latest suggestions by a writer in a foreign journal is the use of ammonia salts thrown into the fire at a convenient stage in the burning. Although the action is not described in detail by the patentee, it may be argued from the behavior of ammonia compounds in the presence of lime, when the two are mixed together and heated, that the net effect will be a reducing of the fusibility of the clay in the neighborhood of the ammonia and lime compounds. This is the basis of an ingenious method of fusing clays and other silicates at conveniently low temperatures without the use of alkalies, which has long been in use in analysis under the name of Lawrence Smith's method. Whether the fusion of the material in brick can be carried out without damaging the quality of the brick, especially as the lime is usually in relatively coarse pieces in limey clays, remains to be seen, as does also the cost of the ammonia salts.

ROOFING TILE REQUIRES CAREFUL HANDLING.

German Writer Advocates Employment of Women to Ensure Proper Care in this Particular.

Owing to the great care needed in handling roofing tile to prevent breakage and damage, a writer in the "Deutscher Toepfer Zeitung" advocates the employment of women for setting and loading tile, on the theory that they would be much more careful than men. The writer also states that much of the damage which eventually ends in broken tiles, is due to the jolting which they receive from being transferred from the drying shed to the kiln and that great care should be taken to see that the joints of the rails on which the transfer cars are run are kept flush and the rails kept in the best condition. He also advocates the use of "bolsters" made of sacking packed with straw, fastened to the turn-tables to prevent damage if the wagons slip while being pushed about on the tables. Similar "bolsters" between each layer of tiles on the wagon, he says, will also prove valuable in preventing the tiles from scraping against each other. He further states that the tile should not be laid in rows across the wagon but lengthwise, each row being separated by strips of soft wood, and that the wagon should be equipped with roller bearings and good springs, to insure the safe delivery of the tile.

QUESTIONS AND ANSWERS

Here, Knotty Problems That Confront Puzzled
Readers of Brick and Clay Record,
Are Unraveled by Experts

Readers of this journal who have problems in manufacture and salesmanship, or any other subject pertaining to their business, are invited to take advantage of this department. The services of the best experts of the world are at your command. Address Question and Answer Department.

To Produce Blue Brick.

41. *Pennsylvania.—We have a shale which burns red. We would like information as to the method of dipping required to produce blue brick.*

The blue colored brick are produced by a manipulation of the air supply in the burning process, reducing the amount at a certain stage of the burning, but we understand that even when the air is extremely limited it is not always possible to produce a blue brick, though a grayish black is not difficult to obtain.

A good plan would be to work with as smoky a fire and as little air as possible, so as to determine what your brick will do at a normal temperature of burning. The gloss required can then be obtained by throwing a little salt into the kiln just before the close of the firing. To dip the brick in a special slip will not really serve your purpose, as if they become chipped in carting to the purchaser they will be useless as blue brick and your trade will suffer.

Clay Becomes "Shiny."

A manufacturer of building brick writes, saying:

"Having exhausted our original bed of clay, we are now using from another which is fairly satisfactory, except that as it comes from the die, it becomes so 'slushy' from the water used for lubrication that a barrelful of thick slime must be removed from the machine and floor each day. Would steam be better for lubricating? We have tried using less water, but the brick are poorly surfaced."

Practical suggestions offered:

It would seem that something is wrong with the die to make so much slush, although water is not a satisfactory lubricant for some clays. If there is not an excessive leakage of water from some part of the die, it might be cheapest to discard the present die and use one lined with felt, which would probably enable you to work the die without the addition of water. We do not think the substitution of steam would obviate the difficulty, though it would be drier. It may be possible that the die is simply out of order or that by making the clay more stiffly, the difficulty might be overcome to some extent. The addition of sand or other non-plastic material might help. If the clay is "short," it would be best to be worked into a soft paste and used with the mouthpiece or the machine lined as before stated.

There are a variety of different mouthpieces available, but any or all of them require adaptation to local conditions and to various grades of clay.

Glazing Sewer Pipe.

40. *Indiana.—What is considered the best method of "salting" a kiln of sewer pipe? Is more than one dose needed?*

A British clayworker answers the question as follows in the "Brick and Pottery Trades Journal." Do you agree with him?

The working of a kiln during the salting period varies according to the class of material used and the color required of the finished goods; besides, most burners have some particular fad of their own in finishing kilns.

i.e., whether the goods are finally burned in an oxidizing atmosphere. There are several conditions which must be observed in the firing of salt-glazed goods, but the two most important are the proportions of air admitted to the goods, or a reducing atmosphere.

It is well understood that the glazes produced by the use of salt have no coloring power in themselves, and by proper working the glaze is transparent. If, however, the kiln contains a quantity of carbon (which is a strong reducing agent), in the form of smoke, when the salting is carried out the glaze will be rendered much darker in color (to brown and very deep brown).

[The carbon only acts indirectly by reducing the iron compounds in the clay.—Editor.]

A capable burner should be able to keep his kiln under control, and produce whatever colors are desired. To prepare for salting, it is first necessary to note that the Seger cone used (generally 7 or 8) indicates that the requisite temperature has been reached, or where no cones are used, that the trials are satisfactory. The fires immediately before salting must be clear, bright, and shining through the bars; the interior of the kiln must be free from smoke. The damper should be lowered to within three inches of the bottom.

It is then necessary to go the round of the fires as quickly as possible, putting a good shovelful of salt well into the back of each firehole.

Immediately after salting, the mouth of each firehole should be covered with an iron plate kept for that purpose. After fifteen minutes or so raise the damper and fire to regain the loss of temperature. The temperature of the kiln must be raised to what it was before salting, as the addition of the salt has lowered it about 250 degrees C. When the original temperature has again been reached the damper is lowered once more, and another salting similar to the first carried out. After fifteen to twenty minutes the damper is again raised, and the kiln heated up as before.

When the kiln clears, a trial piece should be drawn and examined. If it shows a good glaze, allow the fires to burn clear, and apply a final salting with a stronger draught on the kiln than in the previous saltings, so as to brighten up the glaze. Trial pieces should again be drawn, and if satisfactory no further salting is necessary. After the last salting four or five firings at high heat are necessary to form and fix the glaze, but excessively long and continuous firing after the last salting is simply a waste of fuel. During these final firings the damper is kept open. The last fire should be allowed to burn itself down, so as not to provide a reducing atmosphere inside the kiln after closing.

The kiln should be cooked fairly quickly, especially at first, as slow cooling tends to dull the glaze. After the goods reach a dark red heat cooling must be much slower to prevent cracking. To effect this, all the openings are now blocked up and daubed over to make the kiln airtight. The kiln is then allowed to cool slowly, the heat being gently drawn away by leaving the damper open a little.

In about four days the kiln will be ready for emptying.

RISKS ASSUMED BY EMPLOYEES.—In accepting and continuing in the employment in which he is engaged, an employee assumes the ordinary and usual risks and perils that are incident thereto. He assumes all the obvious risks of the work in which he is engaged, and also the risks which he knows to exist, as well as those which by the exercise of reasonable care he may know to exist. By the contract of service he agrees to bear the risk of all such dangers, and he therefore cannot recover for the injuries resulting therefrom. An employer is not bound to warn the employee as to dangers which are obvious and patent to him. And, where the employer and employee are possessed of equal knowledge of the danger, then it is not incumbent upon the employer to warn an employee of sufficient maturity and experience to appreciate the same. In such a case the employee assumes the risk.—Supreme Court of Arkansas in *Chicago, Etc., Co. vs. Grubbs*, 134 Southwestern Reporter, 636.



KILN CONSTRUCTION AND OPERATION.

Among Important Factors in Successful Burning of Clay Wares—Points Often Neglected.

By Anton Vogt.

When a concern is considering the erection of a clay working plant, the mails carry letters, the wires, messages of inquiry, as to the best boilers, engines and machinery equipment, leaving the question of kilns dragging along until nearly the time when the plant shall be put into operation, or a type of kiln is copied from somebody free.

That kiln at that place may have proven the kiln for that kind of fuel and that kind of clay, but many times the kiln under different conditions proves a complete failure. Many times, it is not the fault of the kiln, but rather the operation of the kiln which is at fault.

"Even in these days when burning and kiln building has become a science, kilns are built by men who do not know how to figure out the size of fireholes, bag walls and flues of kilns, nor do they know anything positive about stacks for draft; they simply guess at it, until someone with experience is called in consultation, then some changes must be made." This statement was made, not long ago, by a prominent kiln builder of nearly a generation of experience, and I firmly agree with him.

The construction of a kiln, or at least the designing of a kiln, should be left to a man who can prove why certain flues have to be so wide and so deep and why a stack should be of a certain area for draft. A stack may be low or high, depending on the area in the stack flue. The height of a stack has absolutely nothing to do with the draft. As long as we get the proper area in the stack flue, we can create draft. For instance: In a stack, 30 inches in the clear and 40 feet high, we have 250 cubic feet draft area in the stack flue. In a stack, only 30 feet high, and 36 inches in the clear, we have a stack with 270 cubic feet draft area. A man who only guesses, when building kiln flues or stacks will say, that the higher stack will have a better draft, because of its height, but he can not prove it.

Proper Kiln Construction.

I will not discuss what kind of kiln is the best for all purposes, but will confine myself to the proper method of construction.

A kiln should be made a permanent structure, as nearly as it is in human power to build and I would advise anyone contemplating the erection of kilns to hire men who will do an honest day's work, whether by the day or by contract. I prefer to have kilns built by day work, according to details of construction and specifications and if not done accordingly, it should be torn down and built as it should be. There are some kiln builders, noble exceptions, who build the kilns substantially, so they will endure and stand up under the severe strain of expansion in heating and contraction in cooling, and such kilns can and have been operated with proper care, for 20 years and more, while kilns that were built from

one to three years ago are now or will be in a short time miserable wrecks, built by miserable wretches of "mud daubers," who call themselves bricklayers.

Nine bricklayers, out of ten, use too much mortar in building kilns. The mortar is the weakest part of the kiln and big mortar joints must be avoided, if the kiln is to stand up a reasonable length of time. It makes a great difference to the owner, whether a kiln lasts five or twenty years.

Solid Foundation of Great Importance.

Digging a trench and filling it in a careless way with brickbats makes a poor foundation for a kiln, shows poor management and surely leads to disastrous results and short-lived kilns. It is not only penny-wise and pound-foolishness, but it is criminal and should be punished by law. Many kilns built on such foundations go to pieces in a remarkably short time, and some settle out of plumb and the crowns fall in, killing the workmen engaged in emptying the kiln. All builders of brick buildings take great care in putting down a good solid foundation, although they do not have to contend with expansion and contraction, as is the case with kilns. Why, then, should not the foundations of kilns be built more substantially?

Solid and Open Bottom Floors.

I claim that it takes more time to water-smoke a kiln which has a solid bottom, with a little flue in the center, than one with a perforated bottom. This is no theory, and I challenge anyone to prove that it is not a fact, established in practice. It takes longer to oxidize or heat up a solid bottom kiln and it prolongs the entire burning operation.

The cry is put up, that the heat in an open bottom kiln escapes too fast. But, can it not be held at the right time, when the period when we need all the openings for the escape of moisture and carbon, etc., is completed? Can we not regulate the draft and hold the heat with a damper at the stack?

The fact is that many kilns are built with no provision for regulating the draft with a damper. Thousands of kilns are in operation in this country with one stack or multiple stacks in the kiln walls, where there is no means at all of regulating the draft at any stage of the burn. Either such kilns have too much draft at the finish, or if they have just enough then, they have not enough at the start. Hundreds of such kilns are fired, from beginning to end, without any regulation of draft and of course a great deal more coal is consumed than necessary and then the down draft kilns are condemned by many, when the truth of the matter is: that it is not so much the fault of the down draft kiln in consuming enormous quantities of coal, as it is the wrong principles of burning which are used. If the down draft kilns were handled as they should be in regard to the regulation of draft, there would not be so much ado about nothing and complaint that the down draft kilns consume too much coal. They will, if we let them, if we don't provide

means for regulating the draft and utilizing most of the heat units that there are in a ton of coal.

We have, in the last few years, made wonderful strides in the improvement of machinery, but no gain in quantity; quality, often, has been sacrificed. The auger machines of today have not yet entirely overcome lamination in brick. If the brick are intended for common builders, and dry safely in the dryer and burn without opening up in the kilns and checking, then it does not matter so much, but when brick are for paving and have to stand the rattler test, then it makes a great deal of difference. There is a big field for brick yard engineers, to perfect a machine that will make a great number of brick in a day's run and at the same time make them without that stumbling block—lamination. What is the matter with a machine on the old principle of the plunger? There is no lamination there. Here is a great thing to be solved. Who will be the first to make the others follow?

In severe cases of lamination, we will find, that the fault is not all in the machine, but rather in the nature or composition of the clay, and in such cases we can alter conditions, and add foreign material in the form of grog, which in part overcomes the lamination. Just how much we must mix in must be determined by tests of the material worked at each plant. In one place the addition of 5 per cent, in another 10 per cent, and still in another of 15 per cent of grog in some shape may be found to remedy most of the trouble, but the best remedy is to work the clay in a machine that does not produce the trouble.

Drying of Clayware.

Many clays check in the dryers, because the ware, when it leaves the machines or represses, is transferred into a dryer which is too short. The receiving end of the dryer is too hot for the green brick and the outside dries too rapidly and checking takes place. Clay in a

plastic condition, works like cement, it sets. It must have time to set and stiffen from the outside to the center, then when entering the heat zone it will stand rapid drying more or less, without checking.

Setting the Ware.

Almost any clayworker in a comparatively short time can find by experience the best way to set his ware and no definite instructions can be given to be effective in every place and one would have to be on the ground to observe a while, before he could even suggest a certain method of setting for general use. The product, the fuel, the kilns, etc., all must be taken into consideration.

Burning Question Not Yet Settled.

The writer has repeated many times in the last ten years, that the burning question has not been settled and I am of the same opinion today, in spite of the many new discoveries in the kiln line and the wonderful continuous kilns, which still give continuous trouble in many places, too numerous to mention. By the way, what has become of the Shaw system of burning brick in three hours?

We are improving in the burning of clayware, and that is the most that can be said, owing to the untiring efforts of such men as: Professor Bleininger, Professor Orton, and others, who are giving their life to the study of ceramic problems. With cones and electric pyrometers we can now accomplish what years ago would have been considered impossible. Nevertheless, we have yet to learn and many an old burner, who belittles now the controlling apparatus for better burning, will wonder before long how we ever got along without it and why someone didn't think of it before.

"Apres nous le Deluge:" "After us the deluge" (Attributed to Madame de Pompadour in reference to signs of an approaching revolution): Yes, it will come, a revolution in burning clayware. Put that down; and refer to this in ten years from today.



Indications at this time point to the fact that more sanitary pottery will be produced in the United States during 1913 than ever before. Here and there one hears of new shops starting up, and the additions to the list during the last year have been more numerous for one season than ever before.

East Liverpool, O., is coming to the front in this direction, and the first sanitary pottery there will be placed in operation in January under the management of W. J. Mays, formerly identified with the Wheeling Potteries Co., of Wheeling, W. Va. The East Liverpool Sanitary Manufacturing Co., has just been formed with a capital stock of \$25,000. The incorporators are Thomas V. Milligan, of the Milligan Plumbing & Hardware Supply Co., James N. Hanley, a wealthy real estate operator; Postmaster Russell C. Heddleston, W. B. Fowler and Mr. Mays.

This company has taken a long term lease on the former plant operated by the General Electric Porcelain Co., which has a capacity of four kilns. The operatives are now being engaged, and the making of clay will be started early in January.

The Colonial Pottery Co., of East Liverpool will also

begin to manufacture sanitary pottery January 1, one of the six general ware kilns of this plant being devoted to the exclusive firing of sanitary goods.

The E. H. Sebring Pottery Co., of Sebring, O., is now making experiments in the sanitary branch, and it is possible that one of the five Sebring, O., potteries will be placed on sanitary ware exclusively during the coming year.

In the eastern sanitary manufacturing field, of which Trenton, N. J., is the centre, the manufacturers there, in almost every instance have increased their plants, during the last year, either by the building of new additions or in the erection of additional kilns.

In this connection, the Trenton Potteries Co., has started the construction of a four-story brick and steel addition to its plant, such an improvement being a necessity on account of its increased business.

Additional kilns have also been built at the plant of the Riverside sanitary pottery at Wheeling, W. Va., which is under the management of the Wheeling (W. Va.) Sanitary Manufacturing Co. These kilns were built very early this year.

The general demand for sanitary pottery is greater now than ever experienced. Every year the valuation of the total production shows a remarkable increase over the corresponding year. This growth in the use of sanitary ware has almost put the sale of the "spare bed room toilet set" out of business. In fact the domestic pottery

manufacturers are making fewer toilet sets every year, and they say the cause of this decrease is the general use of the sanitary pottery appliances.

The sanitary business is a great one, and is growing at a most remarkable rate, and it bids fair to become one of the most prominent branches of the industry.



RAYMOND COMPANY EQUIPS LARGEST CLAY PLANT



HE citizens of Dayton, Ohio, are justly proud of the splendid industry which the C. W. Raymond Co. has built up in that city. Therefore, it was a matter for congratulation in which the entire community joined, when the Raymond Company recently secured the contract for equipping the plant of the Ontario Brick Co., to be

"The amount of power required for this plant will be 1,000 horsepower, which will be hydro-electric, taking the current from Niagara Falls. The burning process, by the use of the patents owned and controlled by the Raymond Co., will be done with 300 tons of coal, where 1,000 tons is ordinarily used by the best other known methods.

Use Stiff Mud System.

"To transport the materials used in the construction of this plant, will require 1,500 railroad cars of standard size, over 100 of which will be shipped from the Dayton factory. It will require ten million brick to build the plant and buildings. The treasury of the Canadian government will be enriched by the sum of about \$40,000 for duty. The railroad's purse will be swelled by nearly \$8,000, and the total contract is one-half million dollars, \$125,000 of which goes into the cost of the equipment sent from the local factory.

"The daily output of this plant of 300,000 will be sufficient to build 10 ordinary eight-room houses, or in 65 days enough brick will be made to pave a 10-foot country roadway from Dayton to Cincinnati.

"The burning process, mentioned above, is known as



Geo. M. Raymond, Pres., C. W. Raymond Co.

erected at Toronto, Can. The plant, it is said, will be a mammoth one, with a daily output of 300,000. The "Dayton Journal" of December 1st, devoted considerable space to the matter, showing views of the Raymond plant and portraits of the officers of the company. The article was in part, as follows:

"What is unquestionably the largest contract for clay working machinery and equipment ever placed, was received yesterday by the C. W. Raymond Co. The contract comprises the equipment installation for a complete brick plant to be erected at Toronto, Ont., Can., by the Ontario National Brick Company, which is headed by William Lyall, of the Peter Lyall & Sons Construction Co., of Montreal, the contractors.

"This plant will be larger than any of the kind in the United States, having a total daily capacity of 300,000 brick. The equipment will require 22 of the Raymond Company's largest machines, together with other equipment, for the drying and burning processes.



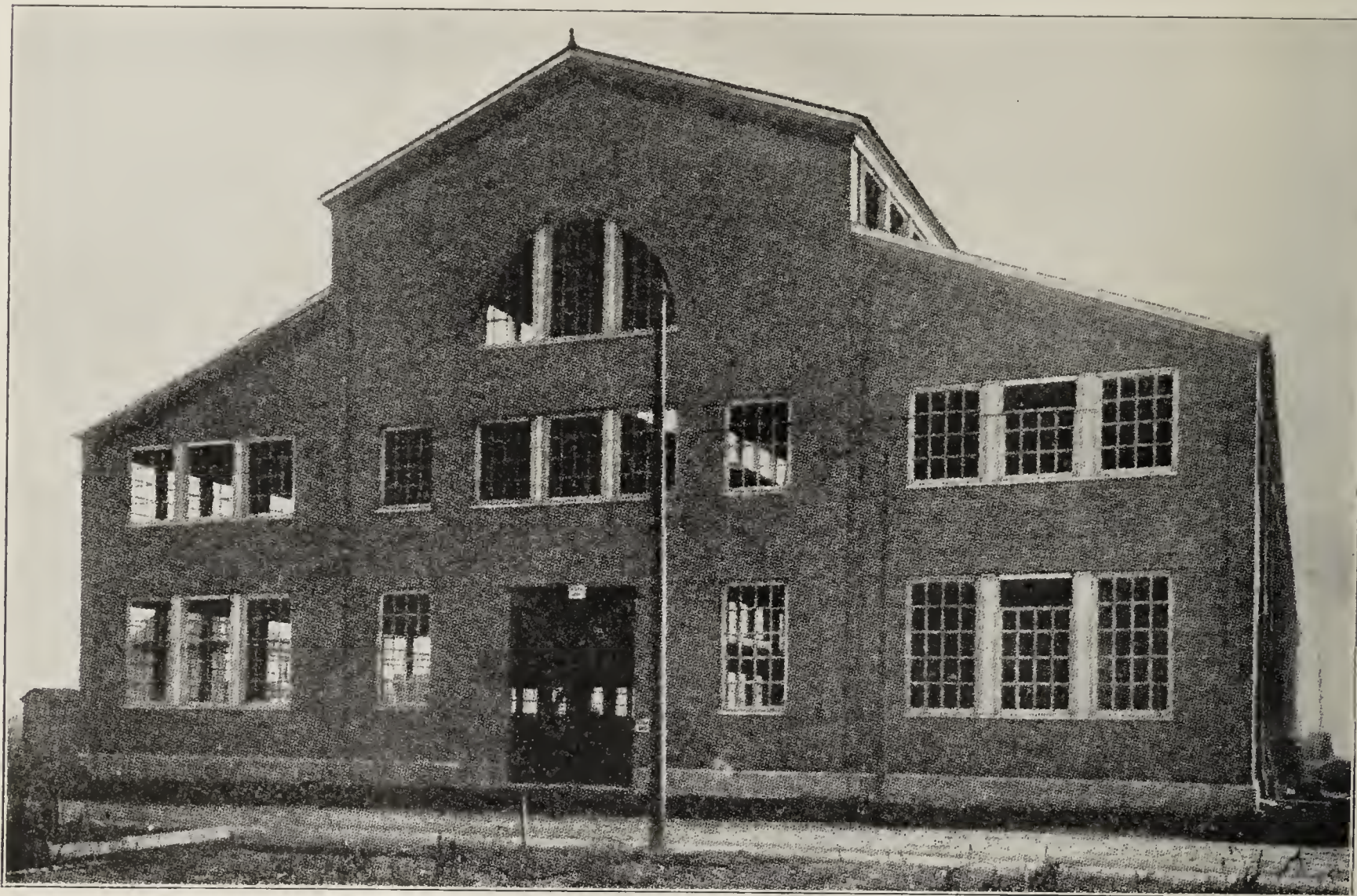
Chas. M. Raymond, V. Pres., C. W. Raymond Co.

the 'producer gas fired continuous process,' which will require 15 gas producers, which will have a daily operating capacity of 9,750,000 cubic feet of gas, or sufficient to supply the entire city of Dayton with artificial gas

from 10 to 12 days under average conditions.

"The culmination of this contract was brought about through the energies of G. M. Raymond, general manager of the C. W. Raymond Company, together with J. C. Brannock, secretary, and Chas. W. Raymond, jr., vice president of the C. W. Raymond Company, and

F. A. Elliott, their Canadian representative. An interview with them informs us that they now have enough business on their books to keep their plant in operation for the coming year, which materially adds to Dayton's prosperity, as well as showing very favorable business indications for the coming year."



Main Building C. W. Raymond Works, Dayton, Ohio.

ANOTHER "CON" IN CONCRETE.

New Concrete Floors in Cook County, Ill., Infirmary Disintegrated and Falling to Pieces.

A. A. McCormick, newly elected president of the Board of County Commissioners, Cook County, Illinois upon taking charge of his office, inspected some of the concrete floors in the Oak Forest Infirmary and found they were made largely of saw-dust instead of sand. Speaking of this, the Chicago News says: Floors laid only a short time ago were found to be falling to pieces and so far disintegrated that pieces could be kicked loose. The hasty examination which the commissioners were able to make, they declare, indicated that saw-dust instead of sand had been used in the composition of the supposed concrete flooring. Conditions were even worse in the hospital building. Pocketfuls of samples of the crumbling flooring were brought back to the city for analysis.

"It seems that the flooring is made largely of sawdust" declared Commissioner Board, crumbling a chunk of the composition between his fingers. "Something certainly is wrong with it or it would not be in such bad shape so soon after being laid. It is actually falling to pieces. Apparently the upper finished coating buckles and comes loose from the main portions of the floor. As soon as persons walk over it or a weight is applied it collapses and starts to break up. The floors must be relaid." This is only another evidence of the fallibility of concrete.

THREE-STORY BRICK BUILDING MOVED.

Substantial Building Successfully Moved to New Site in Forty Days.

A recent issue of the "Engineering Record" describes the manner in which a large three-story brick building was raised bodily from its site, revolved through a right angle, transported 300 ft. and deposited on a new site on the opposite side of the road. The clearing operations had to be carried out within forty days to avoid a penalty of \$100 per day, for every day beyond that period. The building weighed 2,550 tons, covered an area of 60 ft. by 105 ft., had walls 16 in. thick, and was embellished with a tower 120 ft. high. At the outset, the entire weight of the building was transferred on to a series of beams supported on five longitudinal s'ills. Four hundred 10-ton jack screws supported the sills and by means of these the building, with the upper part of the tower removed, was raised 2 ft. in about two weeks. A cast iron ball-bearing pivot was disposed beneath the building at its centre of gravity, and roller planks laid around it. The weight of the building was then transferred to 500 8-in. rollers 4 ft. long. Tackle and a number of two-horsed capstans were then employed to revolve the building. This process occupied another two weeks. The roller planks were then removed and longitudinal track timbers set in their place. The rollers were again inserted and the building steered across to its new site.



URGES BRICK FOR PAVING.

New England Writer Cites Failure of Macadam for Traffic Purposes.

That brick is slowly but surely winning its way to the front is evidenced by the comments by the press. The following from the Springfield, Mass., Republican, shows how the Yankee regards the paving problem:

"It has been apparent for some years that construction methods have not kept pace with the rapid evolution of road building of recent times; but the Connecticut commissioner seems to be the first in this locality to admit the failure of the macadam road under the severe traffic conditions of today.

"It is not necessary to go as far away as Cleveland or western cities to get practical illustrations of the wearing qualities of brick pavement. In our own city the first piece of modern pavement was the brick installed on Main street in 1893 between State and Bliss streets, evidently selected as a place for a severe test of wearing qualities, as a heavy traffic from four directions centers here with the added complication of double car tracks. However, an examination will show it practically as good after 19 years' service as the day it was installed. North Main from Franklin to Carew on the east side of the green, and South Main street, constructed of the same kind of material in 1896 and 1897, are not in as good condition, owing to faulty construction, but the repairs during the 16 years the pavement has been in service have been nothing.

"In West Springfield the same can be said of the two sections on the main western highway, constructed in 1902 and 1903 at a cost of \$2.21 and \$2.51 per square yard respectively.

"Compare this with macadam covered with tarvia, oil or any of the experimental quack medicine mixtures which are being exploited on the market and which make the macadam road today cost anywhere from \$1.50 up for original cost, and if kept in repair has to be fixed up at costs anywhere from 50 cents to \$1 every spring after the frost comes out of the ground. It is not a hard problem in arithmetic to figure which is the most efficient and economical road.

"The state road to Westfield is a shining example of what is going on all over the state on roads subjected to heavy traffic. For two months this road has been under extensive and expensive repairs to the detriment and inconvenience both of the traveling public and the residents in this locality. It is now open again, but within four weeks' time, almost before the echo of the steam roller has died away, signs of disintegration are apparent in a number of places. Neither is this an exceptional situation, but rather what is occurring today in the majority of macadam propositions.

Brick Pavement No Experiment.

Brick pavement is no experiment. Its wearing qualities have been demonstrated under all kinds of traffic conditions for 20 years, and, if the three-handed state high-

way commission were a business proposition instead of a political plum, many of the obsolete methods employed would be eliminated with a much larger showing for the millions annually spent by this august body. Automobile owners are being annually grafted to foot a large portion of these bills for the millions of experimental work, and it is time they arose en masse and demanded a dollar's worth of value for every dollar expended instead of so much going into overhead expense.

"Macadam in various forms will always have large use for residential and other streets with moderate traffic demands, but for the main arteries of travel which are subjected to the heavy traffic of the present day, it is a failure."

BRICK MADE GOOD SHOWING.

Display of Dunn Wire-Cut-Lug Brick Attracted Favorable Comment.

One of the most attractive displays at the Good Roads Congress, held in Cincinnati, O., Dec. 3 to 6, under the auspices of the American Road Builders' Association, was

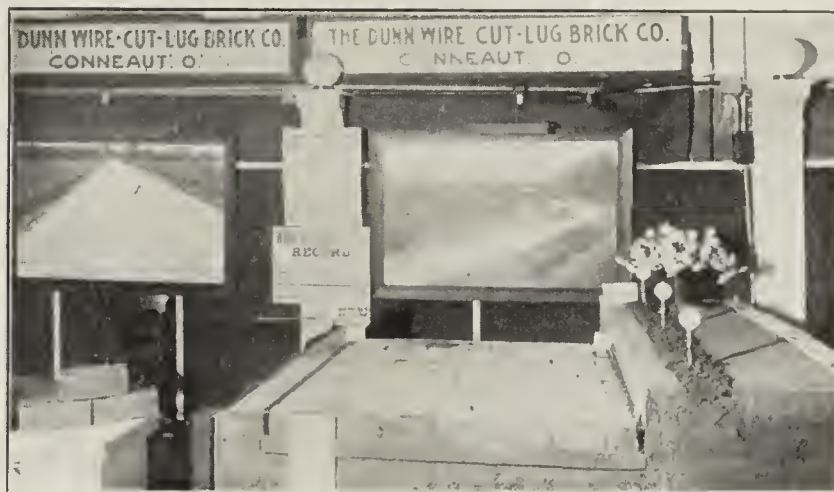


Exhibit of Dunn Wire-Cut-Lug Brick Co. at the American Road Bldrs.' Assn. Con. at Cincinnati, O., Dec. 3-6, 1912.

that of the Dunn Wire-Cut-Lug Brick Co., of Conneaut, O. It showed a finished brick street, a cross section built according to the plans and specifications of the city of Cincinnati. Five inches of concrete was placed on a smooth subgrade. On this concrete was laid two inches of sand, for a cushion. This was rolled to a smooth surface and the brick placed on this and grouted. On the right was a finished highway. The left side showed the gutter used in rural roads. On either side of the brick was a pitch expansion section, which is used to keep the street from buckling in the torrid summer months. Adjoining the Dunn display was that of the National Paving Brick Manufacturers' Association. Both exhibits attracted favorable comment, and with the addition of an illustrated lecture by Secretary Blair, showing views of fine brick streets and roadways, brick pavement received its full quota of publicity, all of which advances the interests of paving brick manufacturers.

OKLAHOMA UNIVERSITY STUDYING PAVING.

General Dissatisfaction with Paving Leads to College Taking Up the Matter.

The general dissatisfaction prevalent in so many cities of Oklahoma where street paving has been done has led the College of Engineering of the State University to take steps to remedy the evil. It is said that inferior material is often used because that employed has not been subjected to the proper tests. The university has installed a standard "Rattler," or "Abrasion Machine," for testing paving brick, and henceforth will test all brick received, charging only a nominal laboratory fee. The school is at this time making a special effort to set forth fairly the merits of brick paving for paving city streets and heavy-traffic market roads. Professor Tucker, instructor in the principles of highway engineering, says: "Just now while Oklahoma is doing so much paving and road construction it should be emphasized that the need for depending upon 'hit or miss' highway engineering does not exist. If ordinary business prudence is exercised vastly, better values should be obtained from the present huge expenditures on road and street work than has been true in the past." Professor Tucker especially recommends brick for paving purposes in Oklahoma, declaring that properly built brick paving has a reasonable first cost, a long life and gives satisfactory service. A careful study

visited Cleveland, Ohio, and while there took his first tour of inspection of a brick paved country highway. He was much impressed with the splendid appearance of the brick roads about Cleveland and was highly pleased with their construction, their cleanly appearance and freedom from dust.

At a cost of something like \$35,000, the construction of Winchester, Ky.'s, first brick street has been finished. The brick covers a distance of about one-half mile and an area of 14,000 square yards, but when the streets are constructed that have already been ordered paved with brick by the city council, Winchester will have about seven miles of brick streets.

Since the consideration of the repavement of Castle street, Geneva, N. Y., has been taken up by the board of public works, the matter has been much discussed by the property owners. Many of them have expressed a preference for brick.

Lay 58,000 Paving Brick in One Day.

Workmen on the West First street paving, Fulton, N. Y., have established a record which, according to present statistics, is a world-beater.

Three men, working on shifts with no more than two men on the job at one time, laid 58,000 brick in one day. On straight-away work this would not have been as difficult, but the work done took in a number of angles, variations in width and curves.

The Association for Standardizing Paving Specifications, of which W. J. Hardee is president, will hold its convention in Pitts-



These pictures speak for themselves. The brick pavement in the upper picture was laid in 1892 and photographed in 1912. Below at the left, concrete pavement Sixth street, Kansas City, Mo., which is in bad shape after fifteen months' wear. At the right, is a Hassam pavement at St. Joseph, Mo., in use three years, closed third time for repairs.

and discussion of brick paving, with arguments for building it extensively in Oklahoma, showing why it is the only logical, low-priced, permanent road surface which can be expected to withstand the steadily growing motor traffic on trunk line highways and market roads, is soon to be issued by the College of Engineering. The bulletin will contain about fifty pages and is to be gratuitously distributed to interested Oklahomans.

ACTIVITIES IN PAVING CIRCLES.

Paul D. Sargent, first assistant director in the office of the Department of Agriculture at Washington, recently

burgh between the dates of Feb. 20 and March 12, exact date to be decided later.

Contracts have been let for the reconstruction of the plant of the Portsmouth Paving Brick Co., which was recently destroyed by fire. The new building will be one story in height and will occupy a site 70 by 85 feet.

By June 1 next it is expected that the new paving brick plant at Summittville, Columbiana County, O., will be ready for operation. Construction work with this end in view is progressing favorably. Four large beehive kilns are now being built.



THE CLAY DRAIN TILE INDUSTRY IN IOWA.

C. B. Platt, Secretary, Western Drain Tile Bureau, Discusses Conditions Now Prevailing.

During the year 1911 more drain tile were manufactured in Iowa than in any other state in the Union. This appears to be more of a statement when it is observed that the nearest competitor for place, Indiana, produced tile to the value of \$2,006,803 and that Iowa factories produced tile exceeding Indiana's value by practically a half million of dollars. It is also interesting to note that Iowa's production of drain tile constituted over 28 per cent of the total production of the United States. The total valuation of Iowa's production of tile in 1911 was less than that of 1910 and it is probable that the total valuation of 1912 will be considerably less than that of 1911. This falling off is not, of course, due to lowered producing capacities. On the contrary, there has been great development in this respect during the past few years and even a greater capacity will be added during the year 1912.

Reduced to miles, Iowa's tile production under present capacities, would be practically 25,000 miles per year, and since a remarkably conservative estimate of the number of miles of tile that will be required to partially drain (that is to remove water of saturation) the comparatively flat lands of Iowa, is placed at 1,000,000, there appears to be no very good reason why the past few dry seasons should witness a falling off in production. It is probably true that a large percentage of the tile used in 1911 was what were demanded by main lines of district drainage systems where tile of large diameter are used, and that the use of tile in farm drainage systems fell 25 per cent below the consumption from the same source during 1909.

For many years Ohio led the states in the production of drain tile and while the production of that state did not equal present day production in Iowa, the number of plants engaged in the industry outnumbered the number now in Iowa by perhaps three to one.

This is accounted for by the fact that there is a wider distribution of suitable clays in Ohio than there is in Iowa.

Manufacturers of tile generally attempt no further classification of clays than the division of soft clays, or such as are readily worked by roll crushers, and hard clays or shales which are only successfully reduced by a drypan or hammer pulverizers.

Soft Clays Not Common in Iowa.

So-called soft clays are not common in Iowa. That is, our soft clays are not the best for drain tile. There is no limit, practically, to the deposits of jointy and sandy yellow clays, but for various reasons, such as poor drying properties, lime pebbles, etc., these clays can not be utilized excepting in instances and then when small capacities are employed. Eastern central Iowa, the first field of drainage operations, has an abundance of the soft clays and it was over these fields that the first development in the tile industry took place. These clays are comparatively free from lime, but they are short, do not mold easily and must be dried very slowly. For these reasons

they offered no inducement for large capacity plants and the greater development took place in the shale fields.

In the vicinity of Mason City is a deposit of what is termed "shale-clay," a clay of a variety which works readily in reduction, through roll crushers. This clay pugs readily, flows in the dies freely, dries under hot blast without damage from checking and does not readily lose its shape in the process of burning. It is accessible and is located in the middle of a great area demanding drainage. It follows that at Mason City the greatest development in the industry has taken place, and it is today the greatest tile producing point in the world.

The hard clays or shales are distributed along the banks of the Des Moines and Raccoon rivers, Webster County being the northern limit of occurrence, and in two counties bordering on the Missouri and the Mississippi. There are other small outcrops of shale fields at various points, all of which have been worked more or less.

Generally, these deposits have a considerable overburden, ranging from eighteen inches to as many feet, which must be wasted before the shales are exposed. In a few instances this is removed with hydraulic stripping equipments, but in the majority of cases it is an item of considerable moment in the cost of production.

Since the shale deposits are not distributed over a greater territory, the consuming field must be supplied by plants from a considerable distance and it follows that the plants supplying the demand must take care of large territories and must, consequently, have large capacities. To manufacture tile in large quantities from shale requires a large investment of capital. The mining and reduction of the shales require heavy machinery and the tempering of the ground shales requires much power. From this point on shales are easily handled. That is, they generally dry without difficulty and have a wide range between the vitrification and melting points and so offer no serious difficulty in burning, and can, as a rule, be vitrified.

The development of the tile industry in the shale fields has been more in numbers of plants than in multiplied capacities.

Possibly more have started than conditions, as applied through a number of years, would warrant. It is undoubtedly true that some shales are better than others and that it is not always safe to use all of a bank of shale from drainage level, to caprock or stripping, in the manufacture of tile, if strictly high quality is desired.

Money Wasted in Wrong Equipment.

A great deal of money has been invested in this field and as the development has been rapid, in order to get in the market before the demand was filled, much money has been wasted in the wrong equipment of one kind and another. In fact this money has been invested to so many disadvantages as to make improvements in methods and equipments imperative and there has grown up a modern plan, a scientific application of mechanics and business to economic question, which must force a practical reinvestment. Manufacturing and marketing science must be mixed in the same vessel. The days of "natural" advantages, obtained by a favored few in the way of freight

rates, having passed, and the manufacturers finding themselves crowded into a common manufacturing territory, all delivering on about the same average freight rate to a certain extent of the field, find themselves confronted with real questions of competition. 1912 has demonstrated that low prices will not make demand. What next? The question must be taken to the consumer, or the rain maker. If it is taken to the consumer, he must be shown that no other material, commercially possible, is the equal of clay or shale for drain tile. The consumer is being educated by the state, and is learning this definition. Drain Tile: "A pipe; perfect in shape, light in weight, extremely hard

and of great strength. Made from clay and burned to vitrification." This is a definition easily learned and easily applied to judge the finished product, consequently a safe one to follow in selecting drain tile. Now there are other things, and they should in this day be counted in as items pertaining to the manufacture of drain tile, which the consumer of tile should know as well as this definition. One is that silk and calico are not grown on the same plant and that one requires more time and effort to produce than the other and that cheap price is not a measure of high grade quality. There should be no uncertainty about investments in the development of the tile industry in Iowa.

BOOSTING THE SELLING END

Continued from page 22.

in shipment, or delivery, can hurt the sales as much as a bad salesman.

Method of Handling Men.

My idea of handling men always has been to make them a part of the selling force.

That may seem a strong assertion, but the success of the business depends upon the sales, and the sales, in a measure, depend upon the men who do the manual labor.

Although we kept twenty teams, and twice that number of men, I always made it a practice to know the name of every man on the job and to know as much of his home life as I could. It sets a lot better with a man to say to him, "Here Jim," or Jack, or whatever his name may be, "let us load this brick next. Harvey will be the next teamster in." Rather than to say, as I heard once in another yard, "Get along there you mutton-head and do something. You are paid to work."

When you talk to a man like that he becomes an eye servant, and he has a grouch, hates the boss and every one who has anything to do with the company.

If you treat your men with respect they will have respect for you; then when you let them know it is for the best interest of the business to keep the yard looking neat they will make an effort to do it even when you are not watching them. A neat yard helps sales, for it is appreciated by the customers that are often brought in by the salesmen.

Made a Man of Big Mike.

"Big Mike is sick," said Jerry Lynch one morning, "and won't be down for a few days."

I mistrusted from the smile on Jerry's face that Mike was on a drunk. Mike was a good man and I disliked very much to have him lay off just at this time. He was a big-hearted, good-natured Irishman, and I had heard when he was in liquor he was somewhat quarrelsome. He only lived a few blocks from the yard and at noon I dropped in to see him. I found him lying on a couch, a sorry-looking sight. His head was tied up and he looked as though he had been sick for a month. I had gone into the house under protests from his wife and came upon him unexpectedly.

"Hello, Mike," said I, "how did the other fellow come out of the scrap?"

Mike saw at once that it would be of no use to dissemble.

"There was three of them," said Mike, "they came at me from all sides and kicked me when I was down. It wasn't my fault exactly."

"Now stop where you are Mike, it was all your fault, because if you had let the whiskey alone you would not have been there. Don't let me hear another word about it.

The wife is making us some coffee, and as soon as we drink it we are going back to the yard. You haven't lost a day in a month, Mike, and we simply cannot let you off, because we need you."

In a short time Mike's wife came in with two cups of strong coffee, some bread and butter and cold meat. I would not allow a protest against my lunching with him, so we drank our coffee and ate together, and Mike went back with me to the yard. He was a little wobbly on his legs, but he tried hard, and the next morning he was all right. When pay day came and Mike found that he was not docked for the half day he had lost he was thoroughly ashamed of himself. That was the last drunk I ever knew Mike to have.

How Mike Helped the Sales.

Let me tell you how Mike used to help the selling department. Dick Longworth came into the office one afternoon about 4 o'clock and said, "Cook & Co. have fallen down on delivering brick to the Otis job and the contractor says he will take as many hard brick as we can deliver before 8 o'clock tomorrow morning. I lost that job by a small margin and would like to show him what we can do on delivery. Cook's people have been figuring on taking the brick direct from the cars and have been disappointed in getting their cars in on time."

"We would have to load after hours," said I.

"Do the best you can," said Longworth. "It will help me if you get just one good-sized load over."

Big Mike had heard the conversation. "How many loads can you give him, Mike?"

"How many wagons will you give me?" said Mike.

I thought a moment. "Eight or ten," said I.

"Then eight or ten he will get," said Mike.

The men worked overtime. The teamsters were out an hour earlier than usual the next morning, and eight three-horse loads of brick were delivered before 8 o'clock and not a grumble from one of the men.

Of course they were paid for their extra time, but they didn't receive anything for their willingness and interest except the good treatment we always tried to give them. The willingness and interest that men can show in order to help the business is something that cannot be paid with money.

There is nothing that will discourage a salesman more than to have the buyer have occasion to find fault with the delivery of material, and the best salesman in the country will become one of the poorest if he is not sustained by the company he sells for. In order to have him well sustained, every man connected with the company should be interested in the selling end.

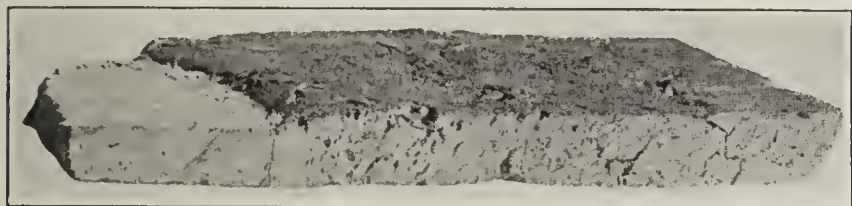


EXPERIMENTAL STUDIES IN FIRE CLAY.

In Vol. XIV, T. A. C. S., Lemon Parker Discusses Effect of Pressure on Vitrification of Clay.

In the construction of large furnaces for gas benches, and similar purposes, blocks of considerable size are used, which formerly were wholly of fireclay, but in later years are made of the same mixture employed in silica brick, viz., quartz 97 per cent, and milk of lime 3 per cent. As is well known, quartz undergoes a marked expansion, beginning at red heat or a little above, and allowance must be made for this expansion when constructing a furnace or the walls will be pushed out of shape or buck-staves will be bent or broken or other damage ensue.

It has been the custom in many places to use heavy paper or straw-board between the joints of these blocks of silica, which on heating, burn out slowly, leaving the way for its volume to be replaced by the increased volume



One of the Clay "Spacers," Sawed Lengthwise to Show the Change in the Body Produced by Compression.

of the silica block at the time they undergo volume change. There are objections to the use of paper, and the writer undertook an experiment, substituting a thin slab of a clay brick, thinking that this material would not disappear at any stage of the burn and that it would become soft enough to flow out under pressure so far as necessary to give relief to the structure.

Test Kiln for Experimental Work.

A small test kiln was constructed as shown in the accompanying drawing. It was braced by heavy railroad iron buck-stays and hog chains strongly enough to resist any expansion which the material under test could exert. From side to side of this furnace, in the zone of most intense temperature, there was built an expansion bridge consisting of a row of silica brick, placed end to end, with the spaces between filled with thin slabs of well burnt clay. This structure, when finished, made a straight bar of silica brick with about $\frac{1}{2}$ inch joints filled with split bricks of fire clay. The fire clay splits stuck out well on either side of the silica brick, so that part of the fire clay was exposed to the full heat of the gases which filled the chamber, but was not subjected to pressure, while that part of the clay between the ends of the brick was exposed to the expansion thrust of the silica brick, and was protected from direct contact with the gases or flames.

The furnace was heated up by natural draft for 24 hours and then fired under blast for the high temperatures for 24 hours longer. The temperature of cone 23 was reached and held for 5 hours additional, without

getting cone 26 down. The silica brick had been burnt to cone 10 before use in this experiment.

The following measurements on the silica brick composing the expansion bridge were recorded:

	Before test.	After test.
Silica brick No. 1....	9 inches long	9 $\frac{7}{32}$ inches long
Silica brick No. 2....	9 inches long	9 $\frac{3}{8}$ inches long
Silica brick No. 3....	8 $\frac{31}{32}$ inches long	9 $\frac{11}{32}$ inches long
Silica brick No. 4....	9 inches long	9 $\frac{11}{32}$ inches long

Total length..... 35 $\frac{31}{32}$ inches long 37 $\frac{9}{32}$ inches long

It will be observed that there was a gain of $1\frac{3}{8}$ inches in the collective length of four silica bricks from the heat treatment. To make this gain in length possible, one of three things must have happened: (a) The walls must have been forced apart. This was prevented by the heavy bracing. (b) The clay slabs between the silica brick or the retaining walls must have either shrunk, or been compressed, or made to flow sufficiently to let the silica brick expand. (c) The straight line of the column must have been deflected and the column formed into an arch. As a fact, both of the conditions described in (b) and (c) occurred. The resistance of the clay slabs was too great to enable the silica brick to expand wholly by compressing the clay brick. Accordingly, the side walls were somewhat indented and the remaining distance was gained by the arching of the column and its deflection from a straight line.

The separating slabs of fire clay were burnt to cone 9 before use in this experiment. These slabs were $\frac{1}{2}$ inch thick before the test. After the test they were deeply indented where under pressure, but not much affected where outside the line of pressure.

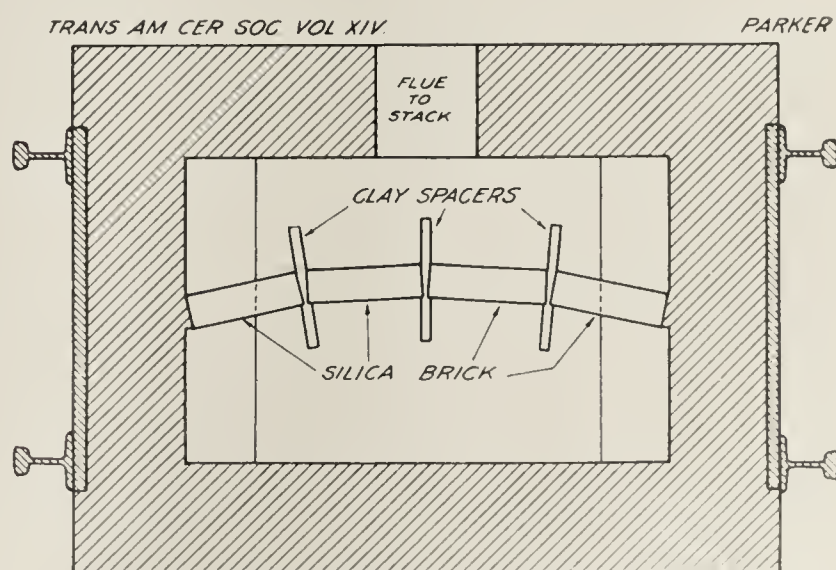


Diagram of Furnace and Test Kilns.

The most notable thing to be seen from a study of the test pieces was the change of texture and color in the clay slabs where they had been under pressure. The ends of the slabs, which endured heat alone, were more or less porous, granular, and the original grains of the clays were still clearly marked. The color was a red-brown flash. Some grains could perhaps be detached, so little vitrified was the body. Between the silica brick,

where the heavy pressure was exerted, the color had changed to a grayish blue or purplish blue, and the body had become dense and vitreous. The original grains were generally not identifiable and were absolutely non-separable. The two structures were so unlike that one would scarcely believe they were from the same clay, if shown the pieces separately.

Cause of Changes Discussed.

The writer desires to raise the question, What is the cause of this difference in color, in vitreous fracture, in density of body, in the same clay when treated at the same temperature. Is it the result of pressure alone, forcing the grains into such close contact that they could combine while they would not combine if separated by pores and voids in the unpressed portion, or is it due to the absorption by the clay bricks of silica from the silica brick at high temperatures, resulting in the formation of a more easily vitrifiable body, or is it due to the gases of the kiln not having equal access to the parts of the clay brick under pressure and outside of the pressure line, and thus permitting reduction to occur in one place and not in the other?

Note by Professor Orton: This paper was discussed by Professor Harvard, Professor Orton, Mr. Ellis Lovejoy, Mr. Parker, and several others and the consensus of opinion was that the marked difference in structure and color was due to the pressure under which vitrification had occurred. A different opinion was voiced by one and concurred in by another, who explained the change on the theory that there had been an actual absorption of silica molecules from the silica brick by the clay brick during their enforced contact at high temperatures and that the alumina-silica ratio was thereby lowered and the clay thus rendered more fusible.

REFRACTORIES HAD GOOD YEAR.

Many Concerns Planning Additions to Take Care of Increased Business.

"Business is good, has been good and will be good, to the best of our knowledge and belief," said K. B. Grahn, president of the Louisville (Ky.) Fire Brick Works, and one of the best-known workers in fire clay in the country. "The prospects for the new year are promising in every particular, and our trade in more distant points is expanding constantly. During the past year we closed contracts for fire brick as far north as Canadian cities, as far south as Birmingham, Ala., as far east as the Virginias and as far west and northwest as San Antonio, Tex., and St. Paul, Minn. The western trade, I might say, is rapidly becoming one of the most important portions of our business."

"Within the next three months the capacity of the Louisville Fire Brick Works will have been increased from 65,000 to 100,000 brick per day. We are now establishing a branch upon valuable fire clay lands at Grahn, Carter County, Ky., which will have a capacity of 35,000 brick per day, and which will be operated in conjunction with the company's yards in Highland Park. The Carter County plant is now being equipped by the Clearfield Machine Shops, of Clearfield, Pa., and will be in operation in the spring."

Three additional kilns have just been completed at the plant of the Mt. Union Refractories Co., at Mt. Union, Pa. The company plans to greatly increase the capacity of the works. This addition gives the company 11 kilns. Over 150 men are employed at the plant, and the daily shipments average between five and six cars.

The General Refractories Co., with headquarters in Pittsburgh, Pa., report that the W. H. Wynn works of West Decatur, Clearfield County, Pa., making fire brick, has been enlarged, and the capacity now is 70,000 a day; the Blair Silica Brick Works at Sproul, Blair County, Pa., has been enlarged to make 75,000 brick a day; the capacity of the Olive Hill (Ky.) Works has been in-

creased to 70,000 brick a day; the firm is also building a new plant to make fire brick at Elk Junction, Ky.

The Bickford Fire Brick Co., of Curwensville, Pa., has had a busy year since taking over the Curwensville (Pa.) Fire Brick Co.'s plant, which it enlarged, remodeled and re-equipped.

H. E. McLain has opened his new plant, known as the McLain Fire Brick Co.'s plant, at Snowshoe, Pa. He is making 20,000 fire brick a day, specializing on linings for blast furnaces.

The Baltimore (Md.) Retort & Fire Brick Co. has run its plant at full capacity during the year, and the outlook for future orders is very encouraging.

The Savage Mountain Fire Brick Co., of Frostburg, Md., has had a prosperous year under the management of Charles C. Gorsuch and John A. Caldwell.

The Maryland Fire Brick Co., of Harwood, Md., of which S. B. Kanowitz is manager, has awarded the contract for the construction of its new plant to the Consolidated Engineering Co., of the Emerson Tower Building, Baltimore, Md. The head offices of the brick company are at 114 Broadway, Baltimore.

The Interstate Commerce Commission, at Washington, held that the rate on fire brick from St. Louis to Texas common points should not exceed, but be the same as the rate on paving, pressed and face brick; that the rate of 27 cents per 100 pounds on fire brick is not unreasonable, and that the present schedule of rates on brick from St. Louis and Versailles, Mo., to Texas should be maintained.

At the recent annual meeting of the stockholders of the Pennsylvania Fire Brick Co., at Howard, Pa., all former directors and officers were re-elected for the coming fiscal year.

At the annual meeting of the Hayes Run Fire Brick Co., at Lock Haven, Pa., the following officers were elected: President, Hon. Ellis L. Orvis; vice-president, B. F. Brown; secretary, Charles R. Kurtz; treasurer, Ellis L. Harvey, and general manager, Carroll W. Keller. The business of the company for the last year has been pronounced highly satisfactory.

The Independent Brick Selling Co., of Philadelphia, Pa., has taken the Philadelphia agency for the Queens Run Fire Brick Co., of Lock Haven, Pa.

The American plant of the Harbison-Walker Refractories Co., which is located near Lock Haven, Pa., is to be placed in operation ere long, this following several years idleness. About 75 men will be given employment at the start. In order that proper accommodations might be had by the workmen who will be employed here, the company has awarded the contract for the repairing of a number of workmen's houses in the vicinity of the plant. Business conditions with the Harbison-Walker interests are excellent. At the last meeting of the Board of Directors of this company, the usual quarterly dividend of one-half of one per cent on the common stock, payable on December 1 to holders of stock, record November 20, was ordered paid. This company has been a consistent dividend payer from the start.

At the general offices of the West Virginia Fire Clay Co., in the Diamond National Bank building, Pittsburgh, it is said that an entire new power equipment is being installed at the plant at New Cumberland, W. Va. The work has been progressing for several weeks.

The Suburban Brick Co., Wheeling, West Virginia, of which C. H. Carpenter is general manager, is adding improvements to its plant at Bellaire, Ohio. Among the new equipment to be installed is a special Premier brick machine of the J. D. Fate Co.'s make.



REPORT ON CONCRETE SEWERS.

Interesting Data Collected by "Municipal Engineering" Shows Many Failures—Much Leakage Noted.

"Alameda, Cal., has had concrete sewers in use for from fifteen to twenty-five years and has had some disintegration and some failures, especially in the older sewers.

"Colton, Cal., reports some disintegration in concrete sewers.

"Los Angeles, Cal., reports some disintegration in old pipe sewers, having used concrete at intervals since 1875.

"San Francisco, Cal., uses monolithic concrete construction for sewers and has several types for large storm sewers, some of which cost as much as \$75 a foot. Brick sewers have not been used in recent years on account of the high cost of brick. One concrete outfall sewer reinforced with expanded metal on a wooden pile foundation, extending into the bay in about 6 feet of water, was shaken by the earthquake and broke transversely in about ten places within 100 feet. The reinforcement is considered to have been inadequate.

"New Haven, Conn., has built some wide and shallow sewers, with heavily reinforced covers, and two 36-inch circular and egg-shaped overflow sewers. Natural cement concrete sewers were built generally from forty to fifty years ago, but this use was abandoned forty years ago because they were unsuitable.

"There has been much comment over a concrete pipe sewer some forty years old at the stockyards in Chicago, Ill., which was found to be almost wholly disintegrated when dug up recently.

"Indianapolis, Ind., has used continuous plain and reinforced concrete pipe for sewers. The plain concrete was observed to have heavy, irregular coating of efflorescence, obstructing the flow, which formed when only ground water was flowing in the sewer. There was much leakage into this sewer in pipe sections, due to heavy pressure of ground water and joints not sufficiently strong to resist it.

Softened by Gas Plant Wastes.

"New Orleans has some plain concrete sewers, 4 to 6 feet in diameter, of same section as brick and costing slightly less. Thin concrete is feared in the local soil, but thick sections are used without hesitation. Large drainage canals are lined and covered with reinforced concrete. The surface of the concrete has softened at one point where the soil through which it is laid is supersaturated with gas plant wastes.

"Bangor, Me., reports crushing of some concrete pipe not properly seasoned before laying.

One Thousand Feet Replaced.

"Portland, Me., reports some 1,000 feet of disintegrated concrete pipe replaced.

"In South Omaha, Neb., cost of concrete sewers runs 10 to 20 per cent less than brick in sizes 24 inches or over. One failure destroyed 120 feet of 6-foot sewer with 9-inch shell. There is slight disintegration of sewers carrying discharge from meat packing plants, and there is a slight growth in the same sewers.

"Dover, N. H., reports failure of some poorly made concrete pipe sewers less than fifteen years old.

"Rochester, N. Y., lines its intercepting sewers with brick, to avoid action of sewage, etc.

Less Risk with Brick.

"Cleveland, O., constructs continuous plain and reinforced concrete sewers and has a small amount of Parmley reinforced block sewers. Reinforced concrete is a little cheaper than brick, though some contractors bid lower on brick than on concrete on the ground that there is less risk in the use of brick.

"Dayton, O., has adopted a rule to use concrete in storm water sewers only in diameters of 30 inches or over. Vitrified pipe is used up to 15 inches and double-strength vitrified pipe from 15 to 30 inches, with 3-foot lengths. There has been some slight attrition in flow line of storm sewers, due to scour, and all new concrete sewers have 120 degrees of the invert lined with vitrified brick.

SEWER PIPE NEWS.

Reports Generally Favorable—Much Work in Prospect for New Year.

The American Sewer Pipe Co. reports the largest volume of business during the months of October and November of any time in the history of this large corporation. The company is receiving orders daily for its new patented segment block, which is used in sewer construction, and the sales for 1913 are expected to far exceed the business of 1912. One of the largest contracts the company has ever booked for this block has recently been received, this calling for 50,000 feet of block, in sizes of 60 and 72 inches.

It is also said that the American Co. has enough orders for paving brick on its books to keep all of its plants making this product, working to capacity until May 1 next. In the meantime a lot of new business will be received, and this being taken for granted, the company has almost positive assurances that all properties will be worked to the limit until the year's end.

Because of the great demand for the sewer pipe of this company, the officials have decided to work all pipe plants throughout the winter months. This is something the company has not done in years.

The abandoned plant of this company at Walkers, O., which is midway between East Liverpool and Wellsville, O., on the Ohio River, was destroyed by fire three weeks ago, the loss being fully covered by insurance. It is believed the fire was caused by tramps, or by sparks from a passing Pennsylvania railroad engine. This property has not been operated for nearly four years, and the most of the machinery had been removed to other plants.

M. W. Neal and James G. Caldwell, members of the Board of Public Works, and City Engineer Lyman, of Louisville, Ky., recently went east, where they visited various cities with a view of acquainting themselves with the durability of various kinds of sewer pipe, their object being to form an idea concerning the best kind of pipe

to use in connection with Louisville's proposed new sewers, to be constructed out of funds derived from the sale of the city's gas stock. They visited Columbus, Newark, Baltimore, Detroit and New York City, and after due consideration will decide on the pipe to select.

Construction of the new five-story sewer pipe plant for the Clearfield Sewer Pipe Co., at Clearfield, Pa., is progressing in a satisfactory manner. This new works will cost about \$150,000. The main building will occupy a site 128 by 290 feet. The power plant will have large capacity, there being 700 horsepower boilers, 600 horsepower engines and 1,000 horsepower feed water heater, pumps and condensers. A feature of the new plant will be its complete automatic sprinkling system.

LAYING VITRIFIED PIPE.

Engineers Pronounce Clay Pipe Everlasting—Urge Careful Laying.

"Vitrified salt-glazed pipe is everlasting in itself, and the best of material and workmanship should be used in connection with it," says the "Architect and Engineer," which, continuing, says: "At the outlet or spill of culverts an apron should be formed of brick, stone or concrete and carried out to a sufficient distance from the face of the bank so that there will be no danger of the earth being washed away.

"When the soil is of such character that the pipe cannot be properly supported by tamping, or other extraordinary conditions render great precautions advisable, a concrete bed or foundation extending up the sides of the pipe to its horizontal center and about six inches thick will add greatly to the stability and durability of the work.

"When capacity greater than afforded by one pipe is desired, two or more lines of pipe may be laid side by side, but care must be taken that the separate lines are

laid far enough apart to secure a solid bed for each line, and to leave sufficient room to admit of the filling being thoroughly tamped along both sides of each pipe.

"For waste or drain pipe where perfectly tight joints are not required, the pipe can be used without filling in sockets, but where tight joints are necessary, use cement mortar made of one-half each cement and good sharp sand. Where mortar is used, be sure to carefully wipe inside of pipe so as to leave a smooth surface, free from projections or lumps at the joints.

Commence at the lower end or outlet of the proposed sewer and grade trench with a uniform inclination throughout its entire length.

"After bringing bottom of trench to true uniform grade, excavate a suitable depression for each hub so that the body of the pipe when laid will have a full firm bearing on the ground.

"Commence laying the pipe at the outlet with all hubs facing up grade. It is most important that pipe be laid on a solid bearing through its length and that the sides be carefully rammed to distribute pressure evenly over entire surface of pipe.

"In laying sizes from 8 inches up, it is safer to dig a narrow trench, say 6 to 8 inches wide and 3 to 6 inches deep, according to size, in middle of trench, with depression for sockets, as advised above. The pipe being laid in this manner will be sure of firm bearing along the sides, and if the loose earth is well tamped and rammed from this bearing up to a point above center line of pipes, they will stand a very great amount of pressure.

"Where larger sizes are being used and the trenches are deep, or in railroad embankments where the filling is put on after the pipe is laid would advise using double strength pipe, and in selecting the size of pipe to be used liberal allowance should be made for abnormal rainfall and other extraordinary conditions."



The Plant of the Marion Machine Foundry & Supply Co., Marion, Ind., Shows Careful Planning in its Arrangement.

LOOKING FOR BIGGEST YEAR.

Indiana Concern Rebuilds Plant to Take Care of Increasing Business.

The Marion Machine, Foundry and Supply Co., of Marion, Ind., has been busily engaged the past year in rebuilding its plant in order to have better facilities for handling its business. This concern says it is looking forward to one of the biggest years in the history of the

"Rust Clay Feeder" and its other line of clay working machinery. The orders taken for the "Rust Clay Feeder" in the month of December far exceed those for any former December in its history. The early ordering of equipment is an indication that there will be considerable activity in the clay machinery line the coming year.

The Marion Company is making a specialty of manufacturing driers and expects to have catalogues out shortly after the first of the year.



STUDY OF SAND-LIME BRICK.

Interesting Conclusions of Experts Go Far Toward Removing Cause for Prejudice.

The literature of sand-lime brick is not very extensive, and that which has appeared, with few exceptions, has dealt only with the technology of the subject. It has been known from the very beginning of the industry that the bond in sand-lime brick is a hydrated calcium silicate. This was an easy matter to determine, for it was known that if pure lime and pure silica produce a bond a calcium silicate must be formed. Reports of a study of sand-lime brick by S. W. Parr and T. R. Ernest, under the direction of the Illinois State Geological Survey, state that it is easy to determine that when lime is steamed with quartz it renders some of the silica soluble, and that in the product a certain amount of water is held in chemical combination. Further than this no satisfactory evidence as to the composition and properties of the bond of sand-lime brick has appeared. Its nature, therefore, is largely an unsolved problem. The report further says: "The hypothesis has been advanced that the bond of a sand-lime brick resembles very closely some of the calcium silicates in set Portland cement. This assumption appears to be quite plausible, inasmuch as the calcium silicates found in set Portland cement are formed by the combination of the calcium hydroxide and silicic acid resulting from the hydrolysis of the ground clinker. But whether this is true or not, it is merely conjecture, and there is no direct evidence either for or against the assumption.

"An article by George F. Ransom, devoted to a discussion of the chemistry of sand-lime brick appeared several years ago. In this the writer shows that a change takes place in the nature of a sand-lime brick during the hardening processes, and that this change cannot be physical, and, consequently, must be chemical in its nature. In the latter part of his article, the author develops the fact that a hydrated calcium silicate must be formed. His conclusion is quoted: 'Therefore, I claim that a chemical change does take place during the steaming, and that the bonding material is calcium hydrosilicate.'

"In a recent issue of the Mineral Resources of the United States Edwin C. Eckel states that chemical methods are of no value in determining the nature of the bond in sand-lime brick, and that only those processes involving the use of the petrographic microscope give any promise of success in the solution of the problem. He accordingly submitted specimens of sand-lime brick for examination to Frederick E. Wright of the Geophysical Laboratory of the Carnegie Institution, with the following results:

"Mr. Wright states that the binding material of these specimens is a hydrous lime silicate somewhat akin to the familiar minerals of the zeolite group. The reactions involved in the formation of such hydrous silicate, from lime and sand in the presence of steam, are simple and well known. It is to be noted, however, that these reactions are in no way comparable to those which take place during Portland-cement manufacture and that the binding material of sand-lime brick is very different in composition and relationship from Portland-cement clinker.

"It may safely be assumed, then, that a sand-lime brick as marketed consists of (1) sand grains held together by a net work of (2) hydrous lime silicate, with probably (if a magnesian lime were used) some allied magnesium silicate and (3) lime hydrate or a mixture of lime and magnesia hydrates. These three elements will always be present, and the structural value of the brick will depend in large part on the relative percentages in which the sand, the silicates, and the hydrates occur."

* * * * *

Method of Coloring.

Summarizing, the report concludes: "In appearance, sand-lime brick are very pleasing. Their color varies from a pure white to a dark gray. Where colored sands are used in mixtures from which they are made, brown, red and other colored brick may be produced. The brick may also be colored by an admixture of various kinds of coloring matter, or by precipitating coloring material within their pores. In cases where artificial coloring is to be practiced, it is essential that the sand used in making the



Methodist Church, David City, Neb., Sand-Lime Brick Used in its Construction Made by the Fremont (Neb.) Granite Brick Co.

brick be of such a character as not to interfere with the color. It should, preferably, be fine and white.

"Sand-lime brick are very uniform in size and shape. They are larger than the ordinary clay brick owing to the fact that they do not shrink on hardening, and therefore fewer are needed for the construction of a given mass of masonry. Again less mortar is required in laying the sand-lime brick because of their regular shapes, and masons can work more rapidly with them because no time is required to select the best face for the outside of the wall.

"From a careful consideration of all information at hand, the conclusion seems to be warranted that sand-lime brick have successfully withstood every reasonable test required of them, and that the future of the industry in this country is assured. Replies received to circular letters sent out to the trade show that most manufacturers

are prospering and that the prejudice always found to exist against a new building material is being gradually removed.

Market Demands Reliable Product.

"The future of the industry demands that a good, reliable product be put upon the market and at a reasonable price. In order that this may be done, it is essential that care be exercised in the location of manufacturing plants. The prospect of securing a ready market and of having at hand an abundant supply of good sand should weigh heavily in the final selection of a site.

"The character of the sand should be taken into consideration in the selection of the process to be used in the preparation of the mixture of sand and lime. For the sake of economy in the use of lime, and in order to promote

strength, and to reduce absorption in the finished brick, the percentage of bonding material should not be very much in excess of that required to unite thoroughly the sand grains into one compact mass; or, in other words, should be just enough to fill the voids in a properly proportioned mixture of fine and coarse sands.

"Sand-lime brick have repeatedly passed satisfactorily all the tests recommended for building brick by the American Society for Testing Materials. The effect of heat upon them has been shown to depend upon the temperature to which they are subjected, a red heat causing the bond to break up, while a white heat causes recombination. Enough work has been done along this line to warrant the statement that for all ordinary purposes sand-lime brick afford a safe and reliable building material."

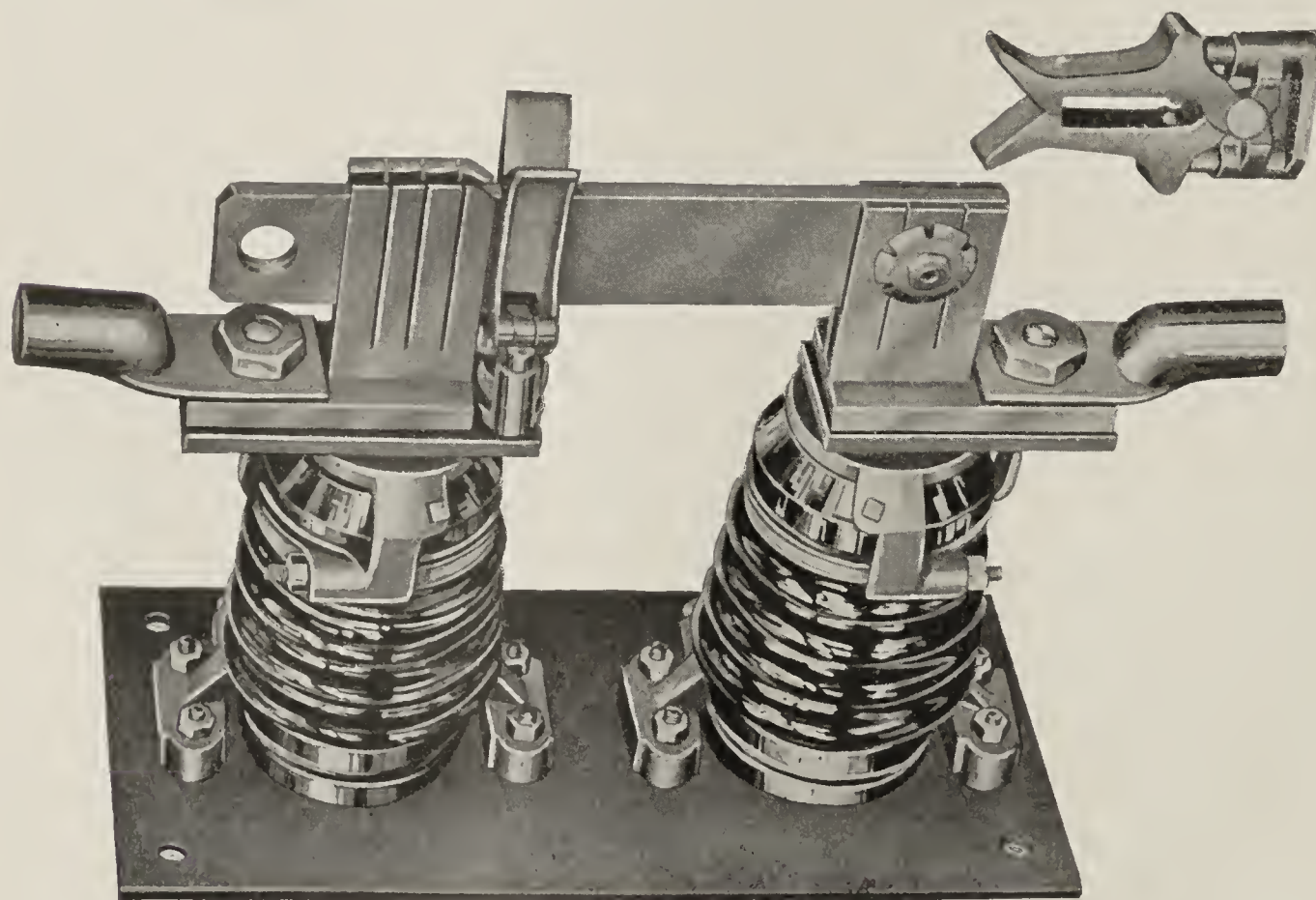
SAFEGUARDING CONTINUITY OF ELECTRIC POWER SERVICE



At the present time, the ubiquity of electricity is practically an accomplished fact. To realize how dependent the people are upon the electric current, it is only necessary to be at the power house end of the telephone when the power is off and an exasperated public has waited for what they consider a reasonable length of time for its restoration. A shut down of the machinery may mean not only serious delay in finishing work, but also men paid high wages standing around idle. This condition

short circuit has occurred on the line, not only resulting in the loss of the switch but also putting the circuit on which the switch was installed out of commission till a new switch could be installed unless there were duplicate circuits.

The safety catch or locking device is a unit in itself and can be applied by anyone to any GE. type L. form G-6 switch merely by clamping it to a support placed between the clip block and the insulator cap. It is of rugged design and is operated with a switch book. This



General Electric Type "L" Disconnecting Switch with Locking Device. (Locking Device Shown at Right.)

makes it imperative that every device be employed which makes for continuity of service.

The illustration shows a locking device that effectually prevents the blade of a disconnecting switch from opening except under the direction of the operator. Instances are on record where the blade of a disconnecting switch not protected by this device has been thrown open or partly open by magnetic repulsion and destroyed when a

locking device consists essentially of two brass bell cranks hinged together at the ends of the two shorter arms and held closed by compression springs. The projections or jaws in the outer ends of the two longer arms close in front of the blade, thus preventing the latter from coming out of the clips. Each bell crank is provided with a dog which moves in a slot in the bell crank's elbow, the dog being hinged at this point. Two compression springs, one pressing outwardly from the switch base against the elbow of each crank and also against the dog, keep the bell cranks closed and the dogs pressed against the back of the switch blade.

To open the switch the outer ends of the bell cranks are pressed back away from the blade allowing the dogs to come forward so as to rest upon the sides of the blade, in which position they hold the jaws in front of the blade apart allowing the switch to be opened. Withdrawing the blade of the switch from between the dogs causes the jaws to automatically close against the sides of the blade and to snap shut as soon as the blade is completely withdrawn.

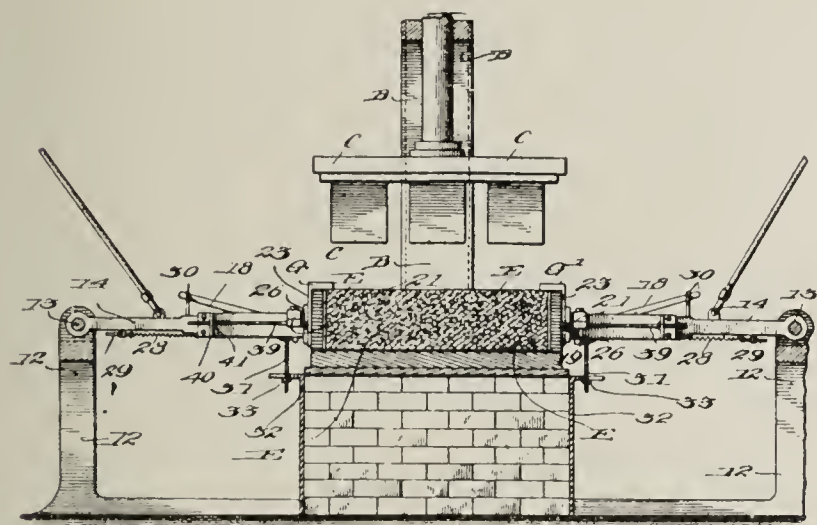
RECENT INVENTIONS of CLAY MACHINERY

Up-to-date Time and Labor-Saving Devices Reduce Cost of Producing Burned Clay Building Materials

By keeping in close touch with all the newest methods and inventions the progressive manufacturer serves his own interest. Yankee inventive genius has done much to improve industrial conditions and it is this constant, ceaseless striving to reduce man's labor and the cost of production and increase the output to satisfy an ever-increasing demand, that has put America in the front rank in the march of progress.

1,012,835. CLAY-PRESS. William D. Frerichs, Totten-ville, N. Y., assignor to The Atlantic Terra Cotta Co., a corporation of New York. Filed March 18, 1907. Serial No. 362,819.

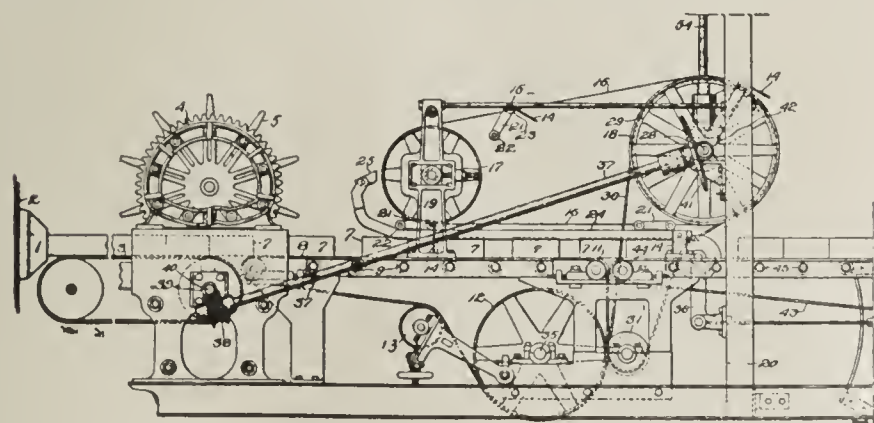
In a clay press, the combination with a support, an arm pivotally connected thereto, a reciprocating head or wall carried by said arm and adapted to form a wall of the mold, and cam mechanism for moving said head or wall.



In a clay press, the combination with a plunger, of a mold box mounted upon the foundation or bed of the press, means for adjusting the side members of said mold box, supports arranged adjacent to the press, end mold members carried by the supports, means for adjusting said end members vertically, means for moving said end members laterally, and means for rocking said members into and out of molding position.

13,256. SYSTEM AND APPARATUS FOR HACKING BRICK. Raymond C. Penfield, New York, N. Y. Filed March 28, 1911. Serial No. 618,049. Original No. 985,203, dated Feb. 28, 1911. Serial No. 578,438.

The combination with means for supplying a continuous succession of brick, of means for automatically receiving the brick, means for delivering said brick in bunches for



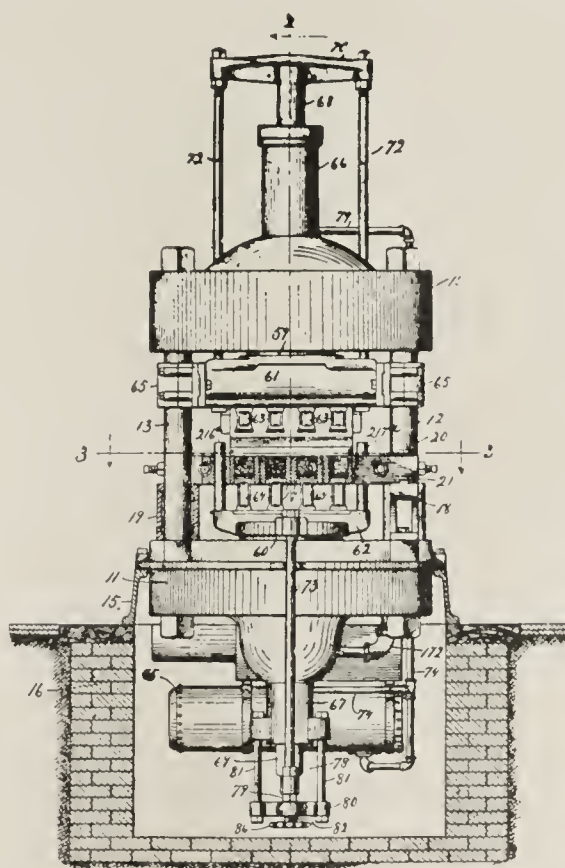
hacking purposes and means for operating said parts in timed relation.

In an apparatus of the kind described, a brick machine provided with an off-bearing belt for delivering substantially continuous streams of molded brick material, a cut-off machine operating in unison with said brick machine for severing said streams of brick material into brick, provided with a separating belt traveling faster than the

off-bearing belt, and bunching mechanism co-operating with said separating belt to bunch together said brick into groups, including a retarding device to engage the forward end of a leading brick and retard the same until a group of brick has come together, and means to move said device into the space between two separated brick when entering upon its bunching operation and away from said end of the brick when the bunching operation is finished.

1,003,987. HYDRAULIC PRESS. Walter H. Cotton and Harry J. Flood, Chicago, Ill., assignors to Chisholm, Boyd & White Co., Chicago, Ill., a corporation of Illinois. Filed Aug. 25, 1908. Serial No. 450,239.

In a hydraulic brick press, a mold, an upper and a lower plunger adapted to press clay between them in said mold, an upper and a lower ram for operating said plungers respectively, the lower ram being the larger, an upper and a lower cylinder wherein said rams fit, means for supplying fluid under pressure to said upper and lower cylinders, an admission valve controlling the flow to said



lower cylinder valve being normally closed, and a piston subject to the pressure in the upper cylinder for opening said valve when the pressure in said upper cylinder reaches a certain intensity, whereby, after said intensity of pressure is reached, fluid will be admitted to both upper and lower cylinders and the clay will be raised in the mold under maximum pressure.

In a hydraulic press, the combination with a mold and plungers of two rams, one larger than the other, cylinders wherein said rams work, means for supplying fluid under pressure to said cylinder and controlling mechanism for controlling the movement of the larger ram, said controlling mechanism being susceptible to pressure in the smaller cylinder and adapted to admit fluid to the larger cylinder when the pressure in the smaller cylinder has reached a predetermined intensity, said controlling mechanism being adjustable whereby it may be set to operate at different pressures.

IS YOUR NAME IN THIS LIST?

The names on the following pages are those of new subscribers to "Brick and Clay Record" who have enrolled since Nov. 14, 1912, and of old subscribers who have renewed their subscription since the same date.

There Are 287 New Subscribers There Are 1246 Renewals

It is significant that there are a great many who have enrolled their names on our subscription list for three and five years and some even for ten and fifteen years.

This remarkable showing is an attestation of the deep sentiment felt for this journal by its friends, the confidence that is reposed in the promises for the future and a desire to show an appreciation for the aggressive policy of "Brick and Clay Record" in its fight for the clayworker.

THESE ARE RENEWALS—IS YOUR NAME IN THE LIST?

Ransom C. Cromley, Niagara Falls, N. Y.....	1 Years	R. Guastavino Co., New York, N. Y.....	5 yrs.
Chas. A. Lano, Goldsboro, N. C.....	2 "	Wm. Lawson, Oxford, Ind.....	1 "
August Karstens, Moline, Ill.....	1 "	John W. Atkinson, Chicago, Ill.....	2 "
J. B. Allen, Oliver Spring, Tenn.....	1 "	W. J. Carmichael, Willoughby, O.....	1 "
The Pyro Clay Products Co., Oak Hill, O.....	1 "	Wm. T. Eason, Syracuse, N. Y.....	1 "
G. E. Goldner, Ft. Dodge, Ia.....	2 "	K. V. Root, Champaign, Ill.....	1 "
John McAlister, Columbus, O.....	2 "	Frank Edmund Layman, Milwaukee, Wis.....	1 "
W. & D. Bell, Quebec, Can.....	3 "	Joseph A. Hofmann, Mill Valley, Cal.....	1 "
Frank Sherman, Postville, Ia.....	1 "	Mark Hurl, Glasgow, Scotland.....	1 "
James Rotallan, Seafield, Ind.....	1 "	Williamson Cliff, Ltd., Stamford, England.....	1 "
H. E. Kennedy, Litchfield, Ill.....	1 "	Library Dept., Ont. Agric. College, Guelph, Ont.....	1 "
Pete Holm, Mobridge, S. Dak.....	3 "	Library of Univ. of Ga., Athens, Ga.....	1 "
G. G. Nicholson, What Cheer, Ia.....	2 "	Research Lab., Pittsburgh P. G. Co., Creighton, Pa..	1 "
Jasper Adams, Battle Creek, Mich.....	1 "	Chas. H. Kerr, Creighton, Pa.....	1 "
Sayre & Fisher Co., New York City, N. Y.....	1 "	Library of Univ. of Minnesota, Minneapolis, Minn....	1 "
N. N. Flykt, Willmar, Minn.....	1 "	J. W. Leech, Erie, Pa.....	3 "
Wm. E. Milliron, Attica, O.....	1 "	Clyde G. Lamond, Alexandria, Va.....	10 "
John McLaughlin, Tiltonville, O.....	1 "	F. A. Grimes, Shawnee, O.....	3 "
Wm. Hawkins, Crawfordsville, Ind.....	1 "	Flint Sandstone B. Co., Flint, Mich.....	2 "
Frank Powers, Grayson, Ky.....	2 "	Jacob Lindley, Tiltonville, O.....	2 "
C. H. Green & Sons, Wakeman, O.....	3 "	John L. Schroepel, Collinsville, Ill.....	1 "
S. A. Hudlow, Covington, Va.....	1 "	Axel Rundberg, Chicago, Ill.....	3 "
S. F. Tondreau, Kansas City, Mo.....	1 "	Alton Brick Co., Alton, Ill.....	2 "
James L. Rolfe, Mt. Savage, Md.....	2 "	Denver Press Brick Co., Denver, Colo.....	2 "
Allentown Brick Co., Allentown, Pa.....	2 "	O. Zimbal Brick Co., Sheboygan, Wis.....	2 "
Polenske Bros. & Co., Hastings, Nebr.....	3 "	Benj. Broadwell, Kingsville, Ont., Can.....	1 "
El Paso Brick Co., El Paso, Tex.....	2 "	C. E. Poston, Attica, Ind.....	2 "
C. H. Newly, Lynnville, Ia.....	2 "	W. A. Wiethoff, Burlington, N. D.....	3 "
Geo. Vater, Cleveland, O.....	2 "	U. S. Brick Co., Tell City, Ind.....	5 "
A. Hansen, Omaha, Nebr.....	5 "	Albert Wilson, Bower City, Ia.....	2 "
J. C. Steele, Wilmington, O.....	1 "	Shackleford Brick Co., Des Moines, Ia.....	2 "
Geo. Siegel, Osceola, Ia.....	1 "	The LaSalle Pressed Brick Co., LaSalle, Ill.....	2 "
Fr. Aufderheide, New Ulm, Minn.....	1 "	Murray Roofing Tile Co., Cloverport, Ky.....	2 "
C. E. Graham, Lakeview, O.....	1 "	J. A. Steinberger, Rockwell City, Ia.....	2 "
Joseph Rapp, Akron, O.....	1 "	Mr. J. E. Henegar, Vandalia, Mo.....	3 "
Henry Hutt, Toronto, Ont., Can.....	1 "	L. B. Rosenfield, Henderson, Ky.....	1 "
J. Samuel Dotterer, Gettysburg, Pa.....	1 "	Diamond Fire Brick Co., Canon City, Colo.....	5 "
W. T. Winkle, Seattle, Wash.....	1 "	Sioux City B. & T. Wks., Sioux City, Ia.....	2 "
F. W. King, Denver, Colo.....	1 "	Ira A. Williams, Gridley, Calif.....	2 "
Chas. Fischer, Milwaukie, Ore.....	1 "	Geo. H. Clippert & Bros., Detroit, Mich.....	1 "
R. C. Kaser, Canal Dover, O.....	1 "	Kingsport Brick Corp., Johnson City, Tenn.....	1 "
J. S. Colley, San Jose, Calif.....	1 "	W. F. Sherwood, Payette, Idaho.....	1 "
Champion Brick Co., Rosedale, Md.....	1 "	Thos. Dawson, Center Junction, Ia.....	1 "
The Kreisher Brick Mfg. Co., New York, N. Y.....	1 "	C. W. Moore, Winsboro, Tex.....	1 "
Porter Brick Works, Porters Sidelay, Pa.....	2 "	The Clarion Fire Brick Co., St. Charles, Pa.....	1 "
George D. Herrold, Fresno, Calif.....	2 "	R. Guastavino Co., New York, N. Y.....	1 "
John Johnson, Reno, Nev.....	1 "	John Clifford, Chicago, Ill.....	1 "
Madison Brick Co., Madison, Ind.....	1 "	West Branch Fire Brick Co., New York, N. Y.....	1 "
The Hamilton Brick Co., Hamilton, O.....	1 "	John Van Zandt, Wichita, Kans.....	1 "
F. H. Haumerain & Sons, Racine, Wis.....	2 "	Albert Lea Brick & Tile Co., Albert Lea, Minn.....	1 "
E. C. Webb, Piggott, Ark.....	1 "	Newman Clock Co., Chicago, Ill.....	1 "
H. G. Cherschelpo, Princeton, Ill.....	2 "	Kenney Maye, Decatur, Ind.....	1 "
S. E. Isgett, Gilbert, La.....	2 "		

West Salem Hollow B. & T. Co., West Salem, Ill.	1	yrs.	R. Newbold, Toronto, O.	2	yrs.
Bullders Brick Co., Seattle, Wash.	1	"	Cunningham Brick Co., Greensboro, N. C.	2	"
Patoka Brick & Tile Co., Huntington, Ind.	1	"	J. L. Neilson & Co., Winnipeg, Man., Can.	1	"
Capt. M. M. Wood, Salt Lake City, Utah.	1	"	Chas. F. Frank, Detroit, Mich.	1	"
Columbus Grove B. & T. Co., Columbus, Ohio.	1	"	Dr. O. H. Gibbs, Wapakoneta, O.	1	"
Dillehay Brick Co., Danville, Ky.	1	"	Dawson Brick & Tile Co., Springfield, Ill.	1	"
Standard Lime & Stone Co., Oakfield, Wis.	1	"	W. E. Lyons Co., Carthage, Ill.	1	"
Chas. F. Lemble, Valparaiso, Ind.	1	"	Grant Falls Brick Co., Grant Falls, N. C.	1	"
Southern Sewer Pipe Co., Birmingham, Ala.	1	"	The Mount Gilead Pottery Co., Mt. Gilead, O.	1	"
Jos. L. Reeves, Beaver Falls, Pa.	1	"	E. C. Wolcott, Warren, O.	3	"
The Alliance Clay Products Co., Alliance, Ohio.	3	"	Geo. E. Snowden, New Cumberland, W. Va.	5	"
Eastern Clay Goods Co., Boston, Mass.	1	"	C. D. Pret, North Star, Mich.	2	"
Poston Paving Brick Co., Crawfordsville, Ind.	1	"	P. F. Greaney, Newburgh, N. Y.	3	"
Smith, Emery & Co., Los Angeles, Cal.	1	"	James G. Fritz, Birmingham, Ala.	1	"
L. R. Spong, West Fairview, Pa.	1	"	Board of Trade, Lonaconing, Md.	1	"
McFeely Brick Co., Latrobe, Pa.	2	"	Board of Trade, Frostburg, Md.	1	"
St. Joseph Pressed Brick Co., St. Joseph, Mo.	1	"	Wm. T. Kirby, Frostburg, Md.	1	"
Thornton Bros. B. Co., Rudyard, Mich.	1	"	Geo. Sloan, Frostburg, Md.	1	"
B. Jasperson, Klagsville, Ont., Can.	1	"	Hope Brick Works, Hope, Ark.	1	"
The Helne Chimney Co., Chicago, Ill.	1	"	Chattanooga Sewer P. & F. B. Co., Chattanooga, Tenn.	3	"
T. A. Gottschalk, Ottawa, O.	2	"	Sibley-Menge Brick Co., Warrior, Ala.	1	"
Juniata Brick & T. Co., Mifflin, Pa.	1	"	Knoxville Brick Co., Knoxville, Tenn.	1	"
Forest Smart, Evanston, Ill.	1	"	Peter Bergerson, Middleboro, Mass.	1	"
S. S. Kimbell Brick Co., Chicago, Ill.	2	"	Jacob Bursworth Sons, Hartford City, Ind.	2	"
The Athens Brick Co., Athens, O.	1	"	J. H. Morton, Jewettville, N. Y.	2	"
P. S. Trowbridge, St. Louis, Mo.	1	"	Arthur N. Pierson & Co., New York, N. Y.	5	"
Northwestern Clay Mfg. Co., New Windsor, Ill.	1	"	Joseph Lane, Castleton, N. Y.	2	"
Geo. J. Walter, Chatsworth, Ill.	3	"	Dominion Sewer Pipe Co., Swansea, Ont., Can.	1	"
Kaolin & Clay Products, Vineyard Haven, Mass.	1	"	Edwin M. Knowles China Co., East Liverpool, O.	1	"
The Dunn Brick Works, Erie, Pa.	1	"	South Knoxville Brick Co., Knoxville, Tenn.	1	"
Atlantic B. & T. Co., Atlantic, Ia.	1	"	E. F. Telling, Assumption, Ill.	1	"
F. P. Nickerson, Canton, O.	1	"	Harvey Brick & Tile Co., Harvey, Ia.	2	"
Public Library, St. Paul, Minn.	1	"	Salt Lake Pressed Brick Co., Salt Lake City, Utah.	1	"
H. G. Moore, Urbana, Ill.	1	"	Southern Clay Mfg. Co., Chattanooga, Tenn.	1	"
J. L. Townsend, McDonalds, N. C.	1	"	Southern Clay Mfg. Co., Warrior, Ala.	1	"
Wm. Radford, Atco, N. J.	1	"	Southern Clay Mfg. Co., Robbins, Tenn.	1	"
Hydraulic Press Brick Co., St. Louis, Mo.	1	"	John J. Ruckno, Forty Fort, Pa.	1	"
Fred Talbot, St. Louis, Mo.	1	"	The Pursell-Grand Co., Cincinnati, O.	5	"
H. L. Eliot, Delaware, O.	1	"	East Gass, Washington, Mich.	3	"
Geo. W. Heald, Chicago, Ill.	1	"	Cambria Clay Mfg. Co., Altoona, Pa.	1	"
Rochester B. & T. Co., Rochester, N. Y.	1	"	A. R. Shipley, Neodesha, Kans.	1 1/2	"
Chas. L. Blissard, Menomonie, Wis.	1	"	B. S. Waltz, Lawrenceburg, Tenn.	1	"
L. E. Bentley, Tama, Ia.	1	"	Henry Murphy, Milo, Calif.	1	"
The Bloomdale T. & B. Co., Bloomdale, O.	1	"	W. Irving Kimball, Philadelphia, Pa.	1	"
Lyle Clay Cleaner Co., New York, N. Y.	1	"	D. E. Young, Woodland, Pa.	1	"
G. P. Damman, New Waverly, Tex.	1	"	Mrs. Jennie M. King, Dahinda, Ill.	1	"
John Hitch, Ridgetown, Ont., Can.	2	"	W. E. Wallis, Elberton, Ga.	1	"
G. H. Jones, Metcalf, Ill.	2	"	Christian Schleede, Ulster Park, N. Y.	1	"
Illinois Terra Cotta Lumber Co., Chicago, Ill.	1	"	C. F. Herman, St. Joseph, Mo.	5	"
Monongahela Clay Mfg. Co., Monongahela, Pa.	1	"	Wm. Hoadkinson, Beaver City, Neb.	1	"
The Finzer Bros. Clay Co., Sugarcreek, O.	1	"	James McNeen, La Junta, Colo.	1	"
Argillo Works, Carbon Cliff, Ill.	1	"	Glens Falls Brick Co., Glens Falls, N. Y.	1	"
Robert Lent, Glasco, N. Y.	1	"	F. Berman, Perth Amboy, N. J.	1	"
Edward Hely, Cape Girardeau, Mo.	1	"	P. F. Reid, LaSalle, N. Y.	1	"
Hillsboro Brick & Tile Co., Hillsboro, N. D.	1	"	Jay Terry, Kingston, N. Y.	2	"
E. Schmatolla, New York City, N. Y.	1	"	Hydraulic Press Brick Co., Philadelphia, Pa.	2	"
E. H. Bradley, Layton, Pa.	1	"	Ayer-McCarel-Reagan Clay Co., Brazil, Ind.	1	"
H. S. Langworthy, Kane, Pa.	1	"	Zeeland Brick Co., Zeeland, Mich.	5	"
Herman Groscup, Altona, Ind.	1	"	Kornmeyer Bros., Decora, Ia.	1	"
Wm. Shaw, Trenton, N. J.	1	"	The Georgia Kaolin Co., Macon, Ga.	1	"
C. W. Sheriff, Rapid City, S. D.	1	"	Alonzo Rose & Co., Kingston, N. Y.	2	"
Gladding McBean Co., Lincoln, Calif.	1	"	W. A. Johnson, Denver, Colo.	1	"
Scholl Bros., Lansdale, Pa.	2	"	Wm. N. Weir, Mountville, Pa.	2	"
L. C. Wick, Butler, Pa.	1	"	James Park, Hopkins, Minn.	1	"
The New Jersey Terra Cotta Co., Perth Amboy, N. J.	2	"	Wm. Hodgkinson, Beaver City, Neb.	1	"
Hydraulic Press Brick Co., Indianapolis, Ind.	1	"	Herbert J. Sisson, Montreal, Can.	1	"
The Ochs & Frey B. Co., Allentown, Pa.	1	"	J. W. Reagan, Powell Sta., Tenn.	1	"
J. B. Owens Floor & Wall Tile Co., Zanesville, O.	1	"	Frank Negele, Worthington, Ind.	1	"
Sumter Brick Works, Sumter, S. C.	1	"	Athens Pressed Brick Co., Athens, Tex.	5	"
The Wabash Clay Co., Veedersburg, Ind.	1	"	Streaton Paving Brick Co., Streaton, Ill.	3	"
The Waite-Fullerton Co., Ltd., Winnipeg, Man., Can.	1	"	Lancaster Brick Co., Lancaster, N. H.	2	"
J. M. Cogner, Basic, Va.	2	"	Macomb Sewer Pipe Co., Macomb, Ill.	5	"
A. J. Ross, Keyport, N. J.	2	"	El Paso Brick Co., El Paso, Tex.	1	"
H. M. Winklejohn, St. Henry, O.	1	"	C. R. Harrison, Lucas, Ia.	2	"
Sebewaing Sandstone B. Co., Sebewaing, Mich.	1	"	B. F. Merchant, Denver, Colo.	1	"
Pearson Brick Co., New Castle, Pa.	2	"	Wm. F. Merchant, Denver, Colo.	1	"
R. G. Eisenhart, Horsheads, N. Y.	2	"	The Midland Brick Co., Peru, Kans.	2	"
Indiana Drain Tile Co., Brooklyn, Ind.	2	"	Geo. Rathjens, St. Paul, Minn.	1	"
The Mosaic Tile Co., Zanesville, O.	1	"	A. R. Batley, Los Angeles, Calif.	1	"
W. S. Jenkins, Akron, O.	1	"	Knapp Brick & Tile Co., Everett, Wash.	1	"
G. F. Kasch, Akron, O.	1	"	Far West Clay Co., Tacoma, Wash.	3	"
Heilman Bros., Tiffin, O.	1	"	F. R. Carter, Peoria, Ill.	2	"
W. W. Swengel, Bloomsburg, Pa.	1	"	Central Brick & Tile Co., Fort Dodge, Ia.	1	"
L. L. Stephenson, Lovick, Ala.	1	"	Fresno Brick & Tile Co., Fresno, Calif.	2	"
Jno. R. Dawkins, St. Louis, Mo.	1	"	Love Wagon Co., Durant, Miss.	1	"
R. B. Hinkley, Luverne, Minn.	2	"	W. J. Keays, Madera, Calif.	2	"
Gainesville Brick Co., Gainesville, Tex.	2	"	The Woodland Clay Co., Woodland, Ill.	1	"
Davenport Brick & Tile Co., Davenport, Ia.	1	"	Somers Brick Co., Atlantic City, N. J.	3	"
Davenport Brick & Tile Co., Davenport, Ia.	1	"	E. L. Cook, State Farm, Mass.	2	"
Davenport Brick & Tile Co., Davenport, Ia.	1	"	Berlin Heights B. & T. Co., Berlin Heights, O.	1	"
Davenport Brick & Tile Co., Davenport, Ia.	1	"	Buffalo Sandstone B. Co., Buffalo, N. Y.	1	"
Davenport Brick & Tile Co., Davenport, Ia.	1	"	National Fire Proofing Co., Perth Amboy, N. J.	1	"
Harley Pottery Co., Nashville, Tenn.	1	"	Allen & Shultz, Waynesfield, O.	5	"
T. C. Lundy, Knoxville, Tenn.	1	"	Shorey & Willis, Cincinnati, O.	2	"
Sterling Pattern Wks., Sterling, Ill.	1	"	A. M. Hochgesang & Sons, Jasper, Ind.	3	"
F. M. Monkman, Wanamingo, Minn.	1	"	Roche Percee Bd. of Trade, Rochee Percee, Sask, Can.	1	"
J. W. Weston, St. Louis, Mo.	1	"	Steiger Terra Cotta & Poty. Wks., San Francisco, Cal.	1	"
F. E. Schultz, Albion, Ill.	2	"	Andrew Barch, Cleveland, O.	2	"
Western Brick & Supply Co., Hastings, Neb.	2	"	Gebr. Wieman, Brandenburg, Germany	1	"
Western Brick & Supply Co., Holdings, Neb.	2	"	Gus Ermler, Saspamco, Tex.	5	"
M. Stein, Hastings, Neb.	2	"	Aberdeen Brick Co., Aberdeen, S. D.	1	"
A. Spaviger, Hastings, Neb.	2	"	Los Angeles Pressed Brick Co., Los Angeles, Cal.	5	"
A. A. Page, Red Wing, Minn.	1	"	M. N. Whitehurst, Norfolk, Va.	1	"
H. B. Rightmyer, Jamestown, N. Y.	1	"	B. Jasperson, Kingsville, Ont., Can.	1	"
The American Building Br. Co., Cleveland, O.	1	"	Baltimore Brick Co., Richmond, Va.	2	"
Y. Miyasaki, McKees Rocks, Pa.	1	"	Atlantic Terra Cotta Co., New York, N. Y.	1	"
Central Clay Products Co., North Tonawanda, N. Y.	1	"	Southern Sewer Pipe Co., Birmingham, Ala.	5	"
M. C. Eells, Rankin, Ill.	3	"	The Northwestern Terra Cotta Co., Chicago, Ill.	3	"
Superior Brick Co., Fort William, Ont., Can.	1	"	The Northwestern Terra Cotta Co., Chicago, Ill.	3	"
Astrid S. Rosing, Chicago, Ill.	2	"	The Northwestern Terra Cotta Co., Chicago, Ill.	3	"
W. T. Blackburn, Paris, Ill.	1	"	The Northwestern Terra Cotta Co., Chicago, Ill.	3	"
Childersburg Brick Co., Childersburg, Ala.	2	"	The Northwestern Terra Cotta Co., Chicago, Ill.	3	"

Frank D. Haney, Omaha, Neb.....	1	yrs.	Lehigh Clay Prod. Co., Lehigh, Ia.....	1	yrs.
J. Thompson & Sons, Fortuna, Calif.....	1	"	The Owensboro Sewer Pipe Co., Owensboro, Ky.....	2	"
Albert Steinacker, Park Falls, Wis.....	1	"	Wm. Kolb, Jr., Philadelphia, Pa.....	4	"
Augustus Reeve, Camden, N. J.....	1	"	Hocking Valley Brick Co., Logan, O.....	1	"
John Hopwood, Menominee, Wis.....	1	"	The W. Booth Lumber Co., Ltd., Toronto, Ont., Can..	1	"
D. N. Darling, Douglas, Ariz.....	1	"	Palmetto Kaolin Co., Columbia, S. C.....	1	"
Henry E. Lyon, Blairmore, Alb., Can.....	1	"	The Standard Stone & Brick Co., Bellaire, O.....	2	"
A. L. Macatee & Sons, Houston, Tex.....	1	"	Mount Union Refractories Co., Mount Union, Pa.....	1	"
Henry Hess & Son, St. Cloud, Minn.....	1	"	E. F. Darnell, Montreal, Can.....	1	"
The Tregillus Clay Prod. Co., Calgary, Alb., Can.....	1	"	A. Snyder, Portage la Prairie, Can.....	1	"
Auburn Shale Brick Co., Auburn, Pa.....	1	"	C. T. Wilson, New Sharon, Ia.....	2	"
Harvey Erter, Cecil, O.....	1	"	The E. Bigelow Co., New London, O.....	1	"
Bertler & Sons, Manitowoc, Wis.....	2	"	Jacob Pfeiffer, Columbus, O.....	3	"
W. H. Steep, Seneca, Ill.....	1	"	Hannah Coady O'Neill, New Haven, Conn.....	1	"
E. G. Lewis, New York, N. Y.....	1	"	Shenango Pottery Co., New Castle, Pa.....	1	"
Gladbrook Pressed Brick & T. Co., Gladbrook, Ia.....	2	"	Martin Tychsen, Bradford, Ill.....	2	"
The L. H. Martin Tile Co., Dwight, Ill.....	1	"	James Stripe, Canton, O.....	1	"
Austin Brick & Lumber Co., Pontotoc, Miss.....	2	"	C. & W. Shiel, Caversham, New Zealand.....	1	"
S. Geijsbeek, Portland, Ore.....	3	"	H. Bird, Republic, Wash.....	1	"
Geo. Weidinger, Malvern, O.....	1	"	F. W. Hall, Madison, Wis.....	1	"
Pearl Clay Products Co., Bradford, Pa.....	1	"	John Van Zandt, Wichita, Kans.....	1	"
M. Hermes, Wooster, O.....	2	"	Acme Pressed Brick Co., Ft. Worth, Tex.....	3	"
John Watson, Danville, Va.....	2	"	Aug. Rundecusch, Mayville, Wis.....	1	"
C. H. Baker, Huntington, Ind.....	3	"	Jacob Newman, San Francisco, Cal.....	2	"
E. S. Naly, Greensburg, Pa.....	1	"	Geo. W. Camp, Texas City, Ill.....	6	"
O. V. Pave, Bakersfield, Calif.....	2	"	Jas. A. Porterfield, Rosendale, Mo.....	5	"
H. G. Willets, Pittsburg, Pa.....	1	"	S. D. Crook, Dover, Del.....	1	"
Salem Tile & Merc. Co., Salem, Ore.....	2	"	Watson Town Brick & C. Prod. Co., Watson Town, Pa.....	1	"
Northwest Brick Co., Davenport, Ia.....	1	"	National Sales Co., Cincinnati, O.....	1	"
S. E. Stevens, Fredonia, Kans.....	1	"	Excelsior Brick Co., Baltimore, Md.....	3	"
A. E. Hilder, Winnipeg, Can.....	2	"	Louisville Pottery Co., Louisville, Ky.....	1	"
F. G. Atkinson, Hainburg, Pa.....	1	"	Cyril Linder, Chicago, Ill.....	2	"
David Ebringer, Brainerd, Minn.....	1	"	C. E. Surles, Richmond, Calif.....	1	"
Sphar Brick Co., Maysville, Ky.....	2	"	A. C. Cameron, North East, Md.....	1	"
J. P. Fletcher, Fletcher, N. Car.....	1	"	Clark Pressed Brick Co., Malvern, Ark.....	1	"
Victor McDougal, No. Robinson, O.....	2	"	G. G. Brown, Bessemer, Pa.....	3	"
F. A. Harris, Waco, Tex.....	1	"	H. K. Brundyge, Havana, Fla.....	1	"
Standard Sewer Pipe Co., Rome, Ga.....	1	"	Wm. Hammerschmidt, Lombard, Ill.....	1	"
E. D. Rand, Springfield, Mo.....	1	"	The Barr Clay Co., Streator, Ill.....	1	"
Robertson Brick Co., Birmingham, Ala.....	1	"	Geo. H. Sandkuhl, Spencerville, O.....	1	"
G. K. Schlotterer, Chester, Pa.....	2	"	Western Terra Cotta Co., Kansas City, Kans.....	1	"
E. M. Deal, Newton, N. C.....	2	"	Park & Tucker, Avery, O.....	1	"
Thos. F. Pindke, Kempton, Ind.....	1	"	Samuel J. Oling, Dolton, Ill.....	1	"
G. B. Simmons, Greenwich, O.....	1	"	Princeton Electric L. & P. Co., Princeton, Ky.....	1	"
John Roffers, West DePere, Wis.....	1	"	F. Q. Mason, E. Liverpool, O.....	1	"
H. Slemmer, Upper Sandusky, O.....	1	"	Armstrong Mfg. Co., Hicksville, O.....	1	"
O. H. Bryan, Parkersburg, W. Va.....	1	"	Hydraulic Press Brick Co., Baltimore, Md.....	1	"
Cincinnati Brick Co., Sekitan, O.....	1	"	W. H. King & Co., Rockford, O.....	2	"
Library Assoc. of Poutana, Poutana, Ore.....	1	"	T. V. Patton, Huntingdon, Pa.....	1	"
Bakersfield Sandstone Br. Co., Bakersfield, Calif.....	1	"	J. W. Spencer & Son, Rocky River, O.....	1	"
O. S. Quammen, Lemmon, S. D.....	1	"	A. C. Gordon, Weiser, Idaho.....	1	"
San Angelo B. Mfg. Co., San Angelo, Tex.....	2	"	J. W. Markham, Traverse City, Mich.....	1	"
The Clay Products Co., Denver, Colo.....	1	"	F. H. Goss Brick Co., Tacoma, Wash.....	2	"
R. B. Tyler, Louisville, Ky.....	2	"	James C. Ross, Somerville, N. J.....	1	"
T. T. Hook, Calgary, Alta., Can.....	1	"	E. T. Mapel, Berkeley, Calif.....	2	"
James P. Prall, Woodbridge, N. J.....	2	"	Rogers Bros., Deshler, O.....	1	"
The Auglaize Tile Co., New Knoxville, O.....	1	"	Stafford Cleveland, Jewettsville, N. Y.....	1	"
John A. Goodwin, Philadelphia, Pa.....	1	"	Buffalo Pottery Co., Buffalo, N. Y.....	1	"
John A. Goodwin, Philadelphia, Pa.....	1	"	John J. Gahn, San Rafael, Cal.....	2	"
H. L. Grant & Son, Goldsboro, N. C.....	2	"	A. S. Cunningham, Ione, Calif.....	1	"
Henry Molesky, Dearborn, Mich.....	5	"	R. Frierwood, Greenwood, Miss.....	1	"
Buffalo Builders Supply Co., Buffalo, N. Y.....	1	"	W. W. Perry, Rome, N. Y.....	1	"
The National Tile Co., Anderson, Ind.....	1	"	Sioux Paving Brick Co., Sioux City, Ia.....	1	"
Public Service Co., Chicago, Ill.....	1	"	Chas. R. Tramp, Nebraska City, Neb.....	1	"
Illinois Clay Products Co., Nashville, Tenn.....	1	"	Addison T. Deshman, Spokane, Wash.....	1	"
The Newport Pressed Brick Co., Newport, Ky.....	1	"	P. Marcuson, Seattle, Wash.....	1	"
W. K. Abbott, Quincy, Ill.....	1	"	Legg Brick Co., Calhoun, Ga.....	1	"
Chas. Guenser & Son, Bowlin, Minn.....	1	"	D. W. Cox, Harrisburg, Pa.....	3	"
Chesley Clemens, Bloomfield, Mo.....	1	"	A. E. Wadelin, Wolf, O.....	1	"
John Gundlach, Tulsa, Okla.....	1	"	Christopher Steadman, Greenridge, N. Y.....	2	"
Henry Crauder, Germantown, O.....	1	"	J. Parry Lukens, Philadelphia, Pa.....	1	"
James Florey, Bryn Mawr, Pa.....	1	"	C. J. Butler, Charleroi, Pa.....	1	"
Jenkins & Reynolds Co., Chicago, Ill.....	2	"	F. L. Simmons, Far Rockaway, N. Y.....	1	"
Atlantic Brick Mfg. Co., May's Landing, N. J.....	1	"	Alphonse Delecourt & Fils, La Madeleine, France.....	1	"
John A. Stout, Beaver, O.....	1	"	L. H. Ricker, Chilton, Wis.....	1	"
C. E. Carpenter, Wahoo, Neb.....	2	"	Princeton Brick Co., Brickton, Minn.....	1	"
W. W. Ittner, Belleville, Ill.....	2	"	W. B. Lawhead, Spokane, Wash.....	1/2	"
Malcolm M. Morrow, Columbus, O.....	2	"	M. Davelaar Son Co., Milwaukee, Wis.....	1	"
Reading Shale Brick Co., Reading, Pa.....	5	"	John P. Hatch, Chicago, Ill.....	1	"
Saco Brick Co., Saco, Me.....	2	"	T. E. Fogarty, Gilbert, Ill.....	1	"
Pittsburgh Tile Co., E. Liverpool, O.....	1	"	L. C. Cline, Macon, Miss.....	1	"
Caroline Skinners, Thorsby, Ala.....	1	"	N. Y. Arch. Terra Cotta Co., New York, N. Y.....	1	"
Nova Scotia Clay Works, Halifax, Can.....	5	"	J. C. Branner, Stanford University, N. Y.....	2	"
Moshomusho-Kogyo-Shikenjo, Tokyo, Japan.....	1	"	C. N. Adams, Alexandria, La.....	1	"
Kishiwada Brick Co., Kishiwada, Idnumi, Japan.....	1	"	L. Klostermeier, Boonville, Ind.....	3	"
M. G. Quinn, Columbia, Mo.....	1	"	Adams Brick Co., Indianapolis, Ind.....	2	"
Wm. H. Fenton, Martin's Ferry, O.....	1	"	The Canton Pressed Brick Co., Canton, O.....	2	"
Findlay Clay Pottery Co., Washington, Pa.....	2	"	The National Roofing Tile Co., Lima, O.....	1	"
Grand Ledge Clay Prod. Co., Grand Ledge, Mich.....	5	"	H. L. Longnecker, Chicago, Ill.....	2	"
Ogechee Brick Co., Union Point, Ga.....	5	"	Charlotte Brick Co., Charlotte, N. C.....	2	"
D. H. Haeger, Elgin, Ill.....	5	"	The Rose Brick Co., Roseton, N. Y.....	1	"
Murray Bros., Kensington, Conn.....	1	"	Beaver Clay Mfg. Co., New Galilee, Pa.....	2	"
The Mitchell Brick Co., Cincinnati, O.....	1	"	James Day, Saginaw, W. S., Mich.....	2	"
Godchaux Brick Co., Ltd., Abbeville, La.....	1	"	The Canton Tile Hollow Brick Co., New Bethlehem, Pa.....	5	"
Reno Press Brick Co., Reno, Nev.....	1	"	Cliffwood Brick Co., Cliffwood, N. J.....	1	"
Fred P. Luther, Kingston, N. Y.....	2	"	Brazil Clay Co., Brazil, Ind.....	1	"
F. P. Jones, Seacombe, Cheshire, Eng.....	1	"	Brazil Hollow B. & T. Co., Brazil, Ind.....	1	"
D. W. Phillips, Clayton, Wash.....	1	"	Wm. Campbell, Brazil, Ind.....	1	"
W. L. Phillips, Alameda, Calif.....	1	"	Thos. Campbell, Brazil, Ind.....	1	"
California Pottery Co., Inc., San Francisco, Calif.....	5	"	John Weaver, Brazil, Ind.....	1	"
Chas. Berrick's Sons, Buffalo, N. Y.....	2	"	Morton Weaver, Brazil, Ind.....	1	"
Mead Petty, Amherst, O.....	2	"	C. E. Baudisch, Brownsville, Tex.....	3	"
J. Brewster Gore, Syracuse, N. Y.....	1	"	Illinois Drain Tile Co., Albion, Ill.....	1	"
C. A. Marshall, Cresco, Ia.....	1	"	Marion Pressed Brick & Tile Co., Marion, Ill.....	2	"
Jno. N. Gregori, Chicago, Ill.....	1	"	The Western Pottery Mfg. Co., Denver, Colo.....	1	"
McQueeny Clay Co., Akron, O.....	1	"	Wm. McIntire & Son, Equality, Ill.....	2	"
Chris Mockenhaupt, Plattsmouth, Nebr.....	2	"	Sheffield Brick & Tile Co., Sheffield, Ia.....	3	"
Jacob Melly & Bros., Red Bud, Ill.....	1	"	W. R. Colman, Santa Barbara, Cal.....	2	"
Geo. Ogan, Danville, Ill.....	1	"	Red River Brick & Tile Co., Stanton, Ky.....	1	"
E. C. Deacon, Lynchburg, Va.....	1	"	Reliable Tile Co., Livonia, Wis.....	1	"
J. M. McLeod, Washington, D. C.....	1	"			

Kansas City Terra Cotta Co., Kansas City, Mo.	1	yrs.	The Cherryvale Brick Co., Cherryvale, Kans.	1	yrs.
Fred W. Cheek, Rockyford, Colo.	1	"	The Stockdale Tile & Brick Co., Carrothers, O.	5	"
D'Hanis Brick & Tile Co., D'Hanis, Tex.	1	"	W. H. Gleason, Jr., Austin, Minn.	2	"
United Iron Works Co., Springfield, Mo.	1	"	Chandler Bros., Sunbury, O.	2	"
Jas. R. Gilchrist, Lowellville, O.	1	"	Lee B. Humphrey, Brookville, Pa.	1	"
T. W. Beake, Alta, Utah.	1	"	Buffington & Gilpin, Kittanning, Pa.	1	"
P. P. Sexton, Ewingville, Pa.	1	"	Ohio Fire Proofing Co., Nelsonville, O.	1	"
C. F. Kaul, Madison, Nebr.	5	"	E. A. Morse, South Bend, Ind.	1	"
R. T. Terry, Leipsic, O.	2	"	Delphi Brick Co., Delphi, La.	1	"
Chas. C. Bukowski, Mokence, Ill.	1	"	Reading Fire Brick Wks., Reading, Pa.	2	"
Standard Securities, Ltd., Vancouver, B. C.	1	"	The National Clay Co., Hatton, O.	2	"
S. G. Brinkman, Fords, N. J.	1	"	Chas. H. Heise, Suring, Wis.	1	"
A. A. McGonigal, Whitney, Fla.	1	"	Joseph Stretch, Montreal, Can.	1	"
L. C. Nelson, Coffeyville, Kans.	5	"	J. B. Thompson, Volant, Pa.	1	"
Wm. G. Mouch, Champaign, Ill.	1	"	Geo. F. Pemberton, Lincoln, Calif.	1	"
R. Komori, Taihoku, Iaiwan, Japan.	1	"	Jas. K. Eyster, Massillon, O.	1	"
Wm. K. Collins, Norfolk, Va.	1	"	The Standard Vitrified Brick Co., Coffeyville, Kans.	1	"
Sanders & Walton, Smithfield, N. C.	1	"	G. L. Greenwood, Oshkosh, Wis.	5	"
Atlas Press Brick Wks., Dallas, Tex.	1	"	Hydraulic Press Brick Co., Chicago, Ill.	1	"
The Mill Hall Brick Works, Lock Haven, Pa.	1	"	Frank D. Powell, Lenoir, N. C.	1	"
Clayburn Co., Ltd., Sumas, Wash.	3	"	Langenberg Brick Mfg. Co., Stevens Point, Wis.	1	"
Herman Winkler, Madison, Nebr.	5	"	C. W. Flagg, West Terre Haute, Ind.	1	"
T. H. McMichael, Alton, Ala.	5	"	Mead Bros. & Land, Enfield, Ill.	2	"
Janesville Red Brick Works, Janesville, Wis.	2	"	J. P. Young, Clayton, Mo.	1	"
Pacific Face Brick Co., Portland, Ore.	1	"	F. E. Tate, Cannon, Minn.	2	"
Baldrige Bros., Illiopolis, Ill.	5	"	G. A. Kampmann, Shreveport, La.	1	"
Olive Hill Fire Brick Co., Olive Hill, Ky.	1	"	M. Welch, Point Pleasant, Ky.	1	"
George T. Graves, Winooski, Vt.	1	"	J. H. Kritenbrink, S. Omaha, Nebr.	1	"
J. H. Bodfish, Coleman, Mich.	1	"	Pacific Coast Pottery & T. C. Co., San Jose, Calif.	1	"
The Mansfield Clay Prod. Co., Mansfield, O.	1	"	Rowley Clark, Denver, Colo.	1	"
Lucius S. Kendrick, Saginaw, Mich.	3	"	Scott B. Walter, Greencastle, Pa.	1	"
Robert P. Dixon, Lincoln, Calif.	1	"	W. A. Gossett, Baker, Ore.	1	"
The Columbia Fire Brick Co., Canton, ..	1	"	Jos. T. Degel, Detroit, Mich.	1	"
Chas. Trojovsky, Norway, Ia.	1	"	T. K. Hendrie, Chicago, Ill.	1	"
Harry T. Dixon, Denver, Colo.	1	"	G. W. Dando, Vanport, Pa.	1	"
J. M. Cutshall, Brazil, Ind.	5	"	John H. Early, Philadelphia, Pa.	1	"
Hank J. Banet, Ft. Wayne, Ind.	1	"	S. M. Lawrence, Jackson, Tenn.	1	"
Wm. Elliott, Glenennan, Ont., Can.	2	"	Brampton Br. B. Wks. Ltd., Brampton, Ont., Can.	1	"
Maurice Barrett, Leeds, Eng.	3	"	Standard Brick Co., Charleston, W. Va.	2	"
Virginia Brick Co., Suffolk, Va.	1	"	E. T. Harrison, Waverly, Ill.	5	"
G. W. Towery, LaGrande, Ore.	1	"	Nelson Ostrum, Heron Lake, Minn.	1	"
Frank E. Vanderhaden, Holton, Mich.	2	"	Gold Bros. Brick Co., Big Stone City, S. D.	1	"
Chas. L. Gohn, Columbia, Pa.	2	"	Corinth Brick Co., Corinth, Miss.	1	"
L. N. Sanford, Southold, N. Y.	2	"	S. L. Larson, Redondo, Wash.	1	"
John Booth & Sons, Bolton, England.	1	"	Carquinez B. & T. Co., San Francisco, Calif.	1	"
Jose de J. Prado, Boston, Mass.	1	"	Puntuney Lime Co., Los Angeles, Calif.	1	"
Pennsylvania Fireproofing Co., Erie, Pa.	1	"	Pittsburg Paving Brick Co., Kansas City, Mo.	1	"
Mayer Bros., Frostburg, Md.	1	"	Earl E. Litz Co., Newark, N. J.	2	"
F. K. Pence, Zanesville, O.	2	"	Freeman Fire Brick Co., New Cumberland, W. Va.	1	"
Acme Brick Co., Marietta, O.	3	"	Milton Brick Co., Inc., Milton, Pa.	1	"
Michigan Sewer Pipe Co., Jackson, Mich.	3	"	Northampton Brick Co., Ltd., Woodstock, N. B.	1	"
Kasten & Schmuke P. B. Co., Jackson, Mich.	2	"	Williams-McIntire Co., Marysville, O.	2	"
M. M. Bushong, Ft. Scott, Kans.	1	"	George C. Zeller, Dobbins, N. J.	1	"
The Coffeyville Stoneware Co., Coffeyville, Kans.	1	"	King's Crown Plaster Co., Cedar Rapids, Ia.	5	"
Gethmann Brick Co., Gladbrook, Ia.	3	"	Consolidated Electric & Mfg. Co., Assumption, Ill.	1	"
W. S. Goodrich, Epping, N. H.	1	"	Excelsior Brick Co., Menomone, Wis.	1	"
William Conway, Philadelphia, Pa.	1	"	Burlington B. & T. Co., Burlington, Wis.	1	"
Oregon Agric. College Library, Corvallis, Ore.	2	"	Tennessee Brick & Tile Co., Dyersburg, Tenn.	1	"
I. Ellisons & Sons, Melbourne, Ky.	1	"	H. T. McLaughlin, Alsey, Ill.	1	"
Geo. W. Schmidt, Buffalo, N. Y.	1	"	J. V. Montrieff, Bridgeport, Tex.	2	"
Garden City Sand Co., Chicago, Ill.	1	"	Beatrice Brick Works, Beatrice, Nebr.	2	"
Cape Girardeau P. B. Co., Cape Girardeau, Mo.	1	"	J. J. Gardner, Mt. Savage, Md.	3	"
C. J. Peterson, Ellsworth, Wis.	1	"	John A. Mehring, Napoleon, O.	2	"
Albert J. Schwarzer, New York, N. Y.	2	"	C. H. Merrick, Syracuse, N. Y.	1	"
W. B. Fleager, Sheldon, Ill.	1	"	C. Van Merrick, New York, N. Y.	1	"
Perfection, Kensington, Pa.	1	"	J. M. Leach, Kokomo, Ind.	5	"
J. J. Sabin, Ft. Smith, Ark.	1	"	New York & New Jersey Brick Co., Kingsland, N. J.	2	"
T. H. Brenton, Neligh, Nebr.	1	"	Howard I. Wheat, Brooklyn, N. J.	1	"
C. J. Lewis, Milton, Ont., Can.	1	"	Uhl Pottery Co., Evansville, Ind.	3	years
Tokyo Higher Technical School, Tokyo, Japan.	1	"	W. H. Fyffe Parry, Gary, Ind.	2	"
Ernest Finch, South Park, O.	1	"	The Colonial Pressed Brick Co., Mogadore, O.	2	"
Swoyer Bros. Brick Co., Allentown, Pa.	1	"	W. E. Rodgers, Punxsutawney, Pa.	2	"
I. N. Warren, Rensselaer, Ind.	1	"	The Finzer Bros. Clay Co., Sugarcreek, O.	1	"
C. S. Lawson, Birmingham, Ala.	2	"	American Sewer Pipe Co., East Liverpool, O.	1	"
Perry Carl, Osnaburg, O.	1	"	Crawfordsville Shale Brick Co., Crawfordsville, Ind.	3	"
J. M. Mamer, Campus, Ill.	5	"	Flint Brick & Coal Co., Des Moines, Ia.	1	"
Wm. H. Nixon, Toronto, O.	1	"	J. W. Stewart, Richfield, Utah.	2	"
F. Schaefer, Breslau, Ont., Can.	5	"	Western Clay Co., Portland, Ore.	1	"
Jos. Fricke, Brillion, Wis.	2	"	Fairmont Drain Tile & Brick Co., Fairmont, Minn.	1	"
M. Dering, Peoria, Ill.	1	"	Hebron Fire Pressed Br. Co., Hebron, N. Dak.	1	"
Roche Brick & Tile Co., St. Paul, Minn.	1	"	The Golden-Fairview P. B. & F. C. Co., Denver, Colo.	2	"
The Columbus Br. & Terra Cotta Co., Columbus, O.	1	"	Eldora Pipe & Tile Co., Eldora, Ia.	2	"
Adolph Lippman, Maryville, Mo.	2	"	Hansen Bros., Princeton, Ill.	1	"
Dr. T. F. Spencer, Salem, Ill.	1	"	Fairfield Brick & T. Co., Fairfield, Ia.	1	"
P. A. Kanengeiser, Bessemer, Pa.	1	"	J. C. Macdure, Clayburn, B. C., Can.	1	"
Jos. Broering, Kansas City, Mo.	2	"	W. O. Cook, Engine, Ore.	1	"
Gould & Gould, Chicago, Ill.	1	"	Kaysville Brick Co., Salt Lake City, Utah.	1	"
Wm. B. LeRoy, Cohoes, N. Y.	1	"	Chas. S. Sage, Greenport, L. I., N. Y.	2	"
Builders B. & Supply Co., Inc., New York, N. Y.	1	"	Pioneer Brick Co., Spokane, Wash.	1	"
W. S. Dove, Ashley, Mich.	1	"	Lee Goldstein, Falls Creek, Pa.	1	"
J. G. Braislin, Crosswicks, N. J.	1	"	F. D. Lobban, Detroit, Mich.	2	"
Caleb Smith, McLeansboro, Ill.	1	"	Elliott & Godfrey, Rosedale, Kans.	1	"
Chas. Stunkard, Tulsa, Okla.	2	"	Lester Frampton, Coleman, Tex.	1	"
J. M. Creswell, Milan, Tenn.	3	"	Hooper Bros. Co., Pittsburg, Pa.	1	"
S. R. Mead & Sons, Springerton, Ill.	2	"	W. C. Corbett-Corwallis B. & T. Co., Corwallis, Ore.	1	"
Acme Pressed Brick Co., Denton, Tex.	3	"	Erwin D. Young, Greenspring, O.	1	"
Acme Pressed Brick Co., Millsap, Tex.	3	"	W. E. Hyer, Del Mar, Calif.	1	"
J. B. McHose, Boone, Ia.	1	"	Holton Brick Co., Muskegon, Mich.	1	"
The Delaware Clay Mfg. Co., Delaware, O.	1	"	Chas. D. Glick, Grammer, Ind.	3	"
Carson Brick Co., Charlotte, N. C.	1	"	R. I. Gangewere, Chattanooga, Tenn.	3	"
J. H. Suhrheinrich, Evansville, Ind.	2	"	The Akron Roofing Tile Co., Akron, O.	5	"
Standard Brick Mfg. Co., Evansville, Ind.	5	"	A. H. Hews & Co., Inc., Cambridge, Mass.	1	"
C. C. Hyatt, Norton, Va.	1	"	Hammett Fire Proofing Co., Washington, D. C.	1	"
Church Brick Co., Sibley, Mich.	1	"	Hackensack Brick Co., Hackensack, N. J.	5	"
J. F. Shrontz, Cleveland, O.	1	"	The Alliance Brick Co., Alliance, O.	1	"
Western Clay Prod. Pub. Bureau, Kansas City, Mo.	3	"	Corry Brick & Tile Co., Corry, Pa.	2	"
Capital City Vt. Brick & P. Co., Topeka, Kans.	1	"	Donnelly Brick Co., New Britain, Conn.	1	"
Spokane Pressed Brick Co., Spokane, Wash.	2	"	Hawkins & Hodges, Okolona, Miss.	1	"
Oscar Wilson, Donnybrook, N. D.	1	"	Carl Ludoquich, Jockgrun, Pfalz, Germany.	1	"
S. C. Mellor, Liberal, Mo.	2	"	J. H. Duke, North Plains, Ore.	1	"
St. Louis Clay Prod. Co., St. Louis, Mo.	2	"	John Hockers, De Pere, Wis.	1	"
The Lumberman's Supply Co., Springfield, Mo.	1	"	Ottawa Brick Mfg. Co., Ltd., Ottawa, Ont., Can.	1	"
			W. H. Wood, Brockville, Ont., Can.	1	"

A. V. Sturgeon, Suffolk, Va.	1	Otto Gerhardstein, St. Stephen, O.	2
L. M. Johnson, Carey, O.	2	P. H. Tiernan, Macomb, Ill.	1
J. T. Earhart, Louisville, Miss.	1	Ernest Beutler, St. Cloud, Minn.	1
Robt. Sowden, Brantford, Ont., Can.	1	Armour Institute of Technology, Chicago, Ill.	1
Library School of Mines & Met., Rolla, Mo.	1	Ridley Park Brick Co., Chester, Pa.	1
A. Blumer, Moss Point, Miss.	1	Dickman Brick & Tile Co., Dexter, Mo.	2
P. M. Johnston Brick Wks., St. Elmo, Ill.	2	G. W. McBride, Cedar Rapids, Ia.	1
B. B. McKenzie, Enfield, Ala.	1	J. S. Maxwell, Williquis, Pa.	1
J. F. Schanno, Union City, Ga.	5	Landrum Tile Co., Centerburg, O.	1
New Mexico Fire Brick Co., Gallup, N. M.	1	E. P. Jones, Metcalf, Ill.	1
Richard Strehle, Stanton, Nebr.	1	J. W. Smith, Adel, Ia.	1
G. S. Brubaker, Peru, Ind.	1	Farmington Brick & Tile Co., Farmington, Ia.	2
Geo. A. Loomis, Fort Dodge, Ia.	1	W. H. Strong Brick Co., Brewton, Ala.	1
G. L. Castner, Las Cruces, N. M.	1	The Northwestern Terra Cotta Co., Chicago, Ill.	3
W. F. Curtayne, Tucson, Ariz.	1	Homer & Frederticks, Lock Haven, Pa.	1
A. W. Rife, Good Hope, O.	1	M. E. Howrey, Kingman, Ind.	1
John W. Lucas, Portland, Me.	1	O. F. McConnell, Medicine Hat, Can.	1
E. Hirst, Sandstone, Alta, Can.	1	Herman Buscher, Varresveck, Germany.	1
V. Holz & Son, Grangeville, Idaho.	1	D. S. Hildebrand, Brickton, N. C.	3
R. J. Stark & Co., Dunedin, N. Zealand.	1	The Logan Clay Product Co., Logan, O.	1
Butler Brick Works, Houston, Tex.	1	Williams Grove Brick Co., Bigler, Pa.	1
Chas. W. Finney, Portsmouth, O.	1	The Ransbottom Bros. Pottery Co., Roseville, O.	1
A. F. Zeek, Hood River, Ore.	1	The Wheatley Pottery, Cincinnati, O.	1
Killian Fire Brick Corp., Killian, S. C.	1	Cuyahoga Brick & Shale Co., Cleveland, O.	2
J. Rooney, Toledo, O.	1	Speeceville Brick Mfg. Co., Steelton, Pa.	2
Public Library, Cincinnati, O.	1	David Stuenkel's Sons, Williamsport, Pa.	2
J. J. Welppert, Cecil, O.	1	C. M. C. Harper, Boston, Pa.	2
Mackenzie & Thayer, Ltd., Saskatoon, Sask., Can.	1	Pettit & Co., New Brunswick, N. J.	1
F. X. Donnelly, Baltimore, Md.	2	E. L. Swelt, Galesburg, Ill.	1
Fred Baum, Sweetser, Ind.	2	Aug. Lundgren, Warren, Minn.	1
Chas. A. Simons, Lima, O.	1	Denny Renton Clay & Coal Co., Seattle, Wash.	3
Portland Drain Tile Co., Portland, Ind.	1	Felix Dasse, Lalueque, France.	1
Texarkana Pipe Co., Texarkana, Tex.	2	R. S. Brown, Sacramento, Calif.	1
Lexington Triumph P. B. Co., Lexington, Mo.	2	Hans Bachl, Magdeburg, Germany.	1
The Hillenbrand Brick Mfg. Co., Louisville, Ky.	1	C. W. Long, Washington, Ia.	1
C. E. Whitney, Hedrick, Ia.	1	Laurenson & Saunders, Addison, Mich.	1
John M. Williams, St. Louis, Mo.	1	Martin Bros., Dunkirk, Ind.	2
Hydraulic Press Brick Co., Kansas City, Mo.	1	Elder Hayslett, Dayton, O.	1
Mansfield Clay Prod. Co., Mansfield, La.	2	J. L. Hull, Cambridge, Ill.	2
Fred M. Fleming, Cherryvale, Kans.	2	Whiteselle Brick & Lbr. Co., Corsicana, Tex.	2
Chapman Brick Co., Ltd., Toronto, Can.	1	W. Harder, Coffeyville, Kans.	1
John McNealy, W. Jefferson, O.	1	G. W. Blickensderfer, Uhrichsville, O.	2
Pittsburgh Gallery Brick Co., Pittsburgh, Pa.	1	Jacob P. Jacobsen, Hopkins, Minn.	1
Igo E. F. Carreras, San Isiro, Buenos Aires, Argen.	1	C. E. Dooley, Scottsbluff, Nebr.	3
Emil Klag, Orrville, O.	1	Raney Bros., Fairfield, Ia.	1
J. W. Cain, Walkers Mills, Pa.	1	Tuthill Bldg. Mat. Co., Chicago, Ill.	1
S. A. Williams, Omaha, Ga.	2	J. G. Layton, Dunn, N. C.	1
Chas. Taylor's Sons Co., Cincinnati, O.	1	C. Solisburg Sons, Aurora, Ill.	1
Brown & Vallance, Montreal, Que., Can.	1	Marsh & Henthorn, Belleville, Ont., Can.	1
Jos. Sawyer, Montreal, Can.	1	Astrid S. Rosing, Chicago.	1
H. C. Stone, Montreal, Can.	1	Booneville Brick & Tile Co., Booneville, Miss.	1
Saxe & Archibald, Montreal, Can.	1	F. A. Terpening, Farmington, Ark.	2
G. A. Monette, Montreal, Can.	1	C. C. Baldwin, Mokence, Ill.	1
E. & W. S. Maxwell, Montreal, Can.	1	Simon S. Kline, West Reading, Pa.	1
Mac Vicar & Heriot, Montreal, Can.	1	C. G. Wright, Highland Park, Ky.	1
Hutchison Wood & Miller, Montreal, Can.	1	South Prong Brick Co., Wetappo, Fla.	1
J. R. Barlow, Montreal, Can.	1	Wm. Ammann, Decatur, Ill.	1
Chas. E. Eckhoff, Belleville, Ill.	1	Sauerman Bros., Chicago.	2
American Society of Civil Eng., New York, N. Y.	1	J. M. Priddy, New Brunswick, N. J.	1
Jos. A. Fruchtl, Kendrick, Idaho.	2	C. W. Isenhour, New London, N. Car.	1
York Brick & Tile Co., York, Nebr.	5	O. A. Miltz, Benton Harbor, Mich.	1
Dallas Bros. Brick Co., Hopkinsville, Ky.	1	Idris Nelson, Dayton, O.	1
S. H. McCrory, Washington, D. C.	1	J. W. McMillan, Milledgeville, Ga.	1
C. B. Chase, Lawrenceville, Va.	2	Mason J. Niblack, Vincennes, Ind.	1
Homer P. Trisch, Mt. Pulaski, Ill.	1	Frederick H. Gooch, Taunton, Mass.	1
The Logan Pottery Co., Logan, O.	2	Texarkana Brick Co., Texarkana, Ark.	1
R. G. Keese, Litchfield, Ill.	2	Lincoln Park Coal & Brick Co., Springfield, Ill.	2
G. D. Elwell, Albany, N. Y.	1	West Point Brick & Lbr. Co., West Point, Ky.	2
Hallatt Bros., Tilbury, Can.	1	Sheridan Press Brick & Tile Co., Sheridan, Wyo.	3
Columbus Brick Wks., Columbus, Nebr.	1	McCook Brick Co., McCook, Nebr.	1
Fred H. Schwetye, St. Louis, Mo.	2	Malakoff Press Brick Co., Fort Worth, Texas.	3
Beaverville Brick & Tile Co., Beaverville, Ill.	1	Dept. of Public Ptg. & Stationery, Ottawa, Can.	1
Union Brick Co., Iola, Kans.	1	C. C. McMillan, Medora, Ind.	1
Seneca Shale Brick Co., Seneca, Kans.	1	The Wilson Brick Co., Inc., Wilson, Conn.	3
What Cheer Clay Products Co., What Cheer, Ia.	1	Warren Overpack, Medicine Hat, Can.	1
King Bros., Colchester, Ill.	3	Alsip B. T. & Lbr. Co., Winnipeg, Can.	5
Cleveland Public Library, Cleveland, O.	1	A. A. Alsip, Winnipeg, Can.	5
Sterling Brick Co., Olean, N. Y.	2	E. L. Alsip, Winnipeg, Can.	5
Milton Brick Co., Inc., Milton, Ia.	1	Krick Tyndall & Co., Decatur, Ind.	3
The Vigo Clay Co., Terre Haute, Ind.	1	Webster & Keyser, Philadelphia, Pa.	1
Free Library of Philadelphia, Philadelphia, Pa.	1	Oliver Cabana, Jr., Buffalo, N. Y.	1
J. S. Unger, Duquesne, Pa.	1	Oliver Cabana, Jr., St. Joseph, Canada.	1
Carnegie Library, Pittsburg, Pa.	1	J. W. Wells Brick Co., Chattanooga, Tenn.	5
J. Russell, Toronto, Ont., Can.	2	H. M. Cowan, Coal City, Ill.	2
The Darlington Brick Co., Darlington, S. C.	2	No Name, Lorain, O.	1
W. F. Hargarten, Indian Head, Sask., Can.	2	James Witty, Dundee, Ill.	1
F. A. Bolduan, Chicago, Ill.	1	Burscough B. & T. Wks., Burscough, England.	1
The Cloverdale Brick & T. Co., Ltd., Vancouver, B. C.	2	Krefting & Benson, Minneapolis, Minn.	2
Theodora W. Graham, Moscow, Idaho.	1	W. A. Stephens, Batavia, O.	1
A. H. Goldsmit, Floral Park, N. Y.	1	Harvey R. Shull, Corunna, Mich.	1
L. H. H. Oberschelp & Son, Maulius, Ill.	1	Wolcott Brick & Drain P. Co., Wolcott, Ind.	1
The I. L. Stiles & Son B. Co., North Haven, Conn.	1	R. D. Stam, Columbus, Ind.	1
H. Mowers & Co., Grover Hill, O.	1	Easum Bros., Colfax, Wash.	1
Library-University Farm, St. Paul, Minn.	1	E. W. Judge, Tyler, Tex.	1
B. F. Drakenfeld & Co., New York, N. Y.	3	The Dennison Sewer Pipe Co., Dennison, O.	1
Rufus B. Keeler, Lincoln, Cal.	2	Anthony Ittner Brick Co., St. Louis, Mo.	1
Henry Bosselman, Concordia, Mo.	2	Wm. Leonard, Delton, Mich.	1
V. L. Garber, Dayton, O.	2	Edward Dubois, Bruges, Belgium.	1
Leonard Forester, Cameron, W. Va.	1	Medapolis B. & T. Wks., Medapolis, Ia.	1
John F. Uhlhorn, St. Paul, Minn.	1	Tip Top Brick Co., Tip Top, Va.	1
C. E. Brought, Little Rock, Ark.	1	Eureka B. & T. Co., Eureka, Calif.	3
Chas. H. Carpenter, Martins Ferry, O.	5	Weatherford Pottery Co., Weatherford, Tex.	1
J. W. Channel, Melvin, O.	2	K. Zvetkowsky, Zamostye, Russia.	1
Atlanta Tile & Brick Co., Atlanta, O.	1	Kende Eleod, Beregszasz, Hungary.	1
Stuart E. Brown, Richmond, Va.	1	Enid Vit. Brick & Tile Co., Enid, Okla.	2
W. B. Garriott, San Augustine, Tex.	1	E. W. Gruber, Ord, Nebr.	1
P. Hempel, Hastings, Nebr.	1	Emile Theroux, Mitchell, Canada.	1
C. Klose & Bros., Lincoln, Nebr.	1	The Clarion Fire Brick Co., St. Charles, Pa.	1
Mason City B. & T. Co., Mason City, Ia.	2	Pollard Bros., Strathcona, Alta., Can.	1
Sunderland Bros. Co., Omaha, Nebr.	2	S. T. H. Bradley, Lake Charles, La.	1
University of Michigan, Ann Arbor, Mich.	1	W. L. Geiger, Crisp, Texas.	2
Mason City B. & T. Co., Mason City, Ia.	2	Amos Barker, Grand Ledge, Mich.	2
Mason City B. & T. Co., Mason City, Ia.	2	Geo. A. Deardorff, Canal Dover, O.	1
Mason City B. & T. Co., Mason City, Ia.	2	G. W. Burlingame, Jennings, Mich.	1
Mason City B. & T. Co., Mason City, Ia.	2	Perrysburg Tile & Brick Co., Perrysburg, O.	1

A. S. Jones, Bernie, Mo.	2	"	B. H. Reid & Bros., Hightstown, N. J.	1	"
J. V. Swift, Denver, Colo.	1	"	Jas. B. Oberly, Wilmington, Del.	1	"
El Paso Building Material Co., El Paso, Tex.	1	"	The Black Fork Co., Blackfork, O.	1	"
Alberhill Coal & Clay Co., Los Angeles, Calif.	1	"	Otto M. Will, Perth Amboy, N. J.	1	"
Geo. French, Polo, Ill.	5	"	Boston Brick Co., Boston, Mass.	1	"
L. H. Ouren, Tekamah, Nebr.	3	"	Chas. Richholt, Holgate, O.	1	"
R. L. Goodin, Lebanon, Ky.	2	"	George Alsip, Fort William, Ont.	1	"
J. A. Barringer & Sons, Whelen Springs, Ark.	2	"	Independent Brick Co., Trenton, N. J.	1	"
Bridgeport Coal Co., Bridgeport, Tex.	2	"	W. S. Rhoades, Montgomery, Ind.	1	"
Horace T. Rice, Warrior, Ala.	3	"	The E. Biglow Co., New London, O.	1	"
Parker & Russell Mining & Mfg. Co., St. Louis, Mo.	1	"	The Toronto Fire Clay Co., Toronto, O.	1	"
Parker & Russell Mining & Mfg. Co., St. Louis, Mo.	2	"	W. M. Ashly, Geneva, O.	1	"
Postville Clay Products Co., Postville, Ia.	2	"	C. C. Wagler, Fort Savannie, O.	1	"
The San Francisco News Co., San Francisco, Calif.	5	"	Sass Bros.-Stuve, Detroit, Mich.	1	"
Harris H. Johnston, Clayton, Mo.	1	"	Frank Cermak, Schenectady, N. Y.	1	"
Frank D'Autremont, Monticello, Ia.	5	"	No Name, Richmond, Va.	1	"
J. R. Ewing, Lawrence, Kans.	2	"	Chas. P. Senger, Plainfield, N. J.	1	"
Underhill Brick & Tile Co., Rockport, Ind.	2	"	Otto Hensel, St. Louis, Mo.	1	"
Richmond Brick Co., New York, N. Y.	1	"	Lenox Brick Co., Keyport, N. J.	2	"
Lamond Bros., Tacoma, Wash.	5	"	Markham Pottery, Ann Arbor, Mich.	1	"
Julius Elmsiedel, Egg Harbor City, N. J.	1	"	Hook Patent Kiln Co., Vigo, O.	1	"
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Eureka Brick Co., Norfolk, Va.	5	"	Wm. Romine, Warrior, Ala.	2	"
E. S. Morse, Washington, D. C.	1	"	F. C. Morgan, Hamden, O.	1	"
Brick Terra Cotta & Tile Co., Corning, N. Y.	5	"	Tim Mannion, Des Moines, Ia.	1	"
A. F. Smith Co., New Brighton, Pa.	5	"	Dominion Shale B. & Sewer P. Co., Nanaimo, B. C.	1	"
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W. E. Riffe, Perryopolis, Pa.	1	"	Black Hawk Brick Co., Davenport, Ia.	1	"
James E. Duncan, Jr., Washington, Pa.	3	"	F. B. Lambert, Chicago, Ill.	1	"
C. A. DeArment, Petoskey, Mich.	5	"	J. F. Moore, Chattanooga, Tenn.	1	"
C. E. Daubenmier, Union City, Ind.	2	"	J. W. Buehler, Fort Washington, O.	1	"
Angola Brick & Tile Co., Angola, Ind.	2	"	J. W. Baldwin, Ottawa, Ill.	1	"
Walter T. Brillhart, York, Pa.	1	"	Kleymeyer & Klutey, Henderson, Ky.	1	"
Ada Clay Co., Ada, O.	1	"	E. F. Guhr, West Allis, Wis.	2	"
Rochester Composite Brick Co., Rochester, N. Y.	2	"	Avon Milling & Mfg. Co., Avon, Ill.	1	"
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Frank Fellers, Ridgefarm, Ill.	3	"	Strong Brick Co., Brewton, Ala.	1	"
R. S. Twist, Rochester, Ill.	1	"	Post Office, Gertrudenberg, Holland.	1	"
W. S. Dickey Clay Mfg. Co., Kansas City, Mo.	1	"	G. B. LeBaron, McAlester, Okla.	2	"
Star Clay Prod. Co., Elmendorf, Tex.	1	"	Trausch Bros., Roseland, Neb.	1	"
Jas. Clayton, Provo, Utah.	1	"	Allegheny Valley Brick Co., Olecin, N. Y.	1	"
Gloninger & Co., Pittsburg, Pa.	5	"	Geo. E. Garton, Golden, Colo.	1	"
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Detroit Public Library, Detroit, Mich.	1	"	E. S. Fox & Co., Reading, Pa.	3	"
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P. B. Broughton, Rochester, Pa.	1	"	J. M. Highhouse, Warren, Pa.	1	"
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The Robinson Clay Prod. Co., Canal Dover, O.	1	"	South Side Brick Co., Punxsutawney, Pa.	1	"
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Mt. Gilead Pottery Co., Mt. Gilead, O.	2	"
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M. Stein, Hastings, Nebr.	2	"
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American Building Brick Co., Cleveland, O.	1	"
Armstrong Mfg. Co., Hicksville, O.	1	"
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L. H. Martin Tile Co., Dwight, Ill.....	1 "	Roche Brick & Coal Co., St. Paul, Minn.....	1 "
D. S. Mayer & Sons, Ridgely, Md.....	1 "	F. E. King, Tampico, Mexico.....	1 "
A. A. McGonegal, Whitney, Fla.....	1 "	Warren Overpack, Medicine Hat, Alta., Canada.....	1 "
J. M. McLeod, Washington, D. C.....	1 "	Jeff N. Miller, Houston, Tex.....	1 "
McQueeney Clay Co., Akron, O.....	1 "	Dr. R. W. Knox, Houston, Tex.....	1 "
Mitchell Brick Co., Cincinnati, O.....	1 "	J. M. Dorrance, Houston, Tex.....	1 "
E. W. Moser, Perrysburg, O.....	1 "	R. J. Kleberg, Kingsville, Tex.....	1 "
Wm. G. Mouch, Champaign, Ill.....	1 "	Acme Pressed Brick Co., Millsap, Tex.....	3 "
Mt. Union Refractories Co., Mt. Union, Pa.....	1 "	Acme Pressed Brick Co., Denton, Tex.....	3 "
Murray Bros., Kensington, Conn.....	1 "	C. S. Lawson, Birmingham, Ala.....	2 "
National Sales Co., Cincinnati, O.....	1 "	Perry Carl, Osnaburg, O.....	1 "
Geo. Neidlinger, Malvern, O.....	1 "	P. A. Kanengeiser, Bessemer, Pa.....	1 "
Northwest Brick Co., Davenport, Ia.....	1 "	Builders Brick & Supply Co., New York, N. Y.....	1 "
Palmetto Kaolin Co., Columbus, S. C.....	1 "	Gould & Gould, Chicago, Ill.....	1 "
James Park, Red Wing Sewer Pipe Co., Hopkins, Minn.	1 "	I. N. Warren, Rensselaer, Ind.....	1 "
Pearl Clay Products Co., Bradford, Pa.....	1 "	Ernest Finch, South Park, O.....	1 "
D. W. Phillips, Clayton, Wash.....	1 "	Perfection, Philadelphia, Pa.....	1 "
Pittsburgh Tile Mfg. Co., East Liverpool, O.....	1 "	Albert J. Schwarzler, New York, N. Y.....	2 "
Jose de J. Prado, Havana, Cuba.....	1 "	O. D. Carpenter, Worth, N. C.....	1 "
Princeton Brick Co., Brickton, Minn.....	1 "	Delhi Brick Co., Delhi, La.....	1 "
Princeton Brick Co., Princeton, Ky.....	1 "	J. B. Thompson, Volant, Pa.....	1 "
O. S. Quammen, Lemmon, S. D.....	1 "	Ohio Fire Proofing Co., Nelsonville, O.....	1 "
Red River Brick & Tile Co., Stanton, Ky.....	1 "	W. H. Gleason, Jr., Austin, Minn.....	2 "
Jos. L. Reeves, Beaver Falls, Pa.....	1 "	Cherryvale Brick Co., Cherryvale, Kas.....	1 "
Robertson Brick Co., Birmingham, Ala.....	1 "	Lumbermen's Supply Co., Springfield, Mo.....	1 "
Jas. C. Ross, Somerville, N. J.....	1 "	S. C. Mellor, Liberal, Mo.....	2 "
Aug. Ruedebusch, Mayville, Wis.....	1 "	J. F. Shrontz, Cleveland, O.....	1 "
Sanderr & Walton, Smithfield, N. C.....	1 "	S. A. des Briqueteries & Ceramiques, Lustin, Belgium	1 "
Geo. H. Sandkuhl, Spencerville, O.....	1 "		

HERE'S THE WAY OUR SUBSCRIBERS WRITE

J. M. Coyner, Basic, Va.—"I like 'Brick and Clay Record' very much and think it worth many times the subscription price to anyone interested in Brick—the best building material in the world. Every man contemplating building should take it. Your journal is well worth as much, yea even more than any other in the field."

Burt Ogburn, Phoenix, Ariz.—"'Brick and Clay Record' is sure worth the price of subscription and then some."

Wabash Brick Co., Terre Haute, Ind.—"We derive a great deal of valuable information from 'Brick and Clay Record's' reading columns and we certainly wish you continued success."

La Salle Press Brick Co., La Salle, Ill.—"We certainly consider 'Brick and Clay Record' the very best publication of its kind in circulation."

J. A. Cameron, Comanche, Okla.—"'Brick and Clay Record' is a splendid journal and I appreciate its regular visits."

John McAlister, Columbus, O.—"I am seldom at home but among the pleasures awaiting me on my return is that of reading your journal. I count the time well spent in perusing its columns."

G. W. Songer, Prop. Brazos Brick & Drain Tile Works, Rosenberg, Tex.—"We find some mighty valuable articles in your journal and some of them alone, are worth the entire year's subscription. We think the magazine is worth three times the price you ask for it. Business in this part of Texas is good. In fact, we cannot take care of all the orders that come to us. The people are gradually waking up to the great benefits to be derived from draining their

land and as a consequence the drain tile department of our business is rapidly increasing."

Mr. Frank R. Spulak, Canby, Ore.—"While I am but a new subscriber to your excellent paper, I read every copy from cover to cover and enjoy it very much. I wish your paper continued success."

J. B. Lorensen, Harlan, Iowa.—"'Brick and Clay Record' is certainly a very good and useful journal for anyone engaged in the manufacture of brick as it keeps one in touch with the thoughts of other successful clayworkers, and the best and most up-to-date methods of clay manufacturing."

B. F. Neff & Son, Bryan, Ohio.—"We prize 'Brick and Clay Record' very highly and we do not see how we could get along without it. We have had a fair year and have sold out about everything we carried over from last year so that we are now stocking up again."

The Clyde Brick & Tile Works, Clyde, O.—"We enjoy your good journal very much and find in it many valuable and helpful suggestions. Hoping and trusting that the Democrats will not be so elated over their victory as to cause radical and sweeping changes in the financial situation, we will continue with our very good business."

Harold Copping, Kankakee, Ill.—"Any one who is a subscriber to 'Brick and Clay Record,' must be fully aware of the extremely good value he is getting at a very low cost."

M. J. Lee Brick & Tile Co., Paola, Kans.—"'Brick and Clay Record' is a dandy and we don't want to miss a single copy."

F. E. Keeler, Pres. Mason City Brick & Tile Co., Mason City, Iowa.—"We have your favor of recent date advising the advance in price by 100 per cent of 'Brick and Clay Record,' effective Jan. 1st, 1913, and wish to congratulate you on doing this as it seems only fair that your price on this excellent journal should be advanced. This should also set a good example to the clay producers, who should likewise advance the price on their products, although perhaps not as high a per cent.

"We will take advantage of your very liberal offer and wish you would extend our subscription for five years and for the first year, 1913, send a copy to each of our superintendents. (List follows.)

"Enclosed herewith you will find our check for \$10 to cover same."

Lee B. Humphrey, Brookville, Pa.—"Enclosed find \$2 to advance my subscription for two years in accordance with your special offer. You certainly are putting out an interesting and instructive publication and I do not see how any clayworker can get along without its aid, as it certainly is as useful to a clayworker as a dictionary is to a school teacher. With best wishes for your success"

The National Clay Co., Hatton, O.—"Enclosed please find two one-dollar bills to pay for the extension of our subscription from date of expiration two years. Although we feel that the 'Brick and Clay Record' is cheap even at the proposed advance in price, we consider this a bargain and so renew before Jan. 1st, 1913. Thanking you for the opportunity."

Boonville Brick & Tile Co., H. T. Turkett, Mgr., Boonville, Miss.—"We like your paper and think it has benefited us a great deal more than the price of the paper. Will just state here that clay brick and clay drain tile is taking the lead in this part of the country. It is a mighty hard thing to fool the people long at a time."

Columbus Brick Works, Columbus, Nebr.—"Enclosed find check for one dollar to renew my subscription to 'Brick and Clay Record.' The magazine is certainly a masterpiece of its kind and I would not be without it for twice the cost. The brick business is good in Nebraska and we are all trying to make it better. At present we are busy with six masons and fifteen laborers erecting a Hoffman continuous kiln of 16 chambers. Will use fan for draft."

J. W. McMillan, Pres., Milledgeville Brick Works Co., Milledgeville, Ga.—"Thanks for calling my attention to the expiration of my subscription to the 'Brick and Clay Record.' It gives me pleasure to mail \$1 P. O. money order for a continuance of your always instructive and interesting journal. Business continues good with us. We are enlarging the plant, one of the improvements being a semi-continuous 'Haigh' kiln 370 feet long, with a chimney 152 feet high. With many kind wishes."

P. M. Johnston Brick Works, St. Elmo, Ill.—"Enclosed find money order for \$2 for which please mark our subscription ahead that many years. We find many good, helpful things in the 'Brick and Clay Record' and do not want to be without it."

Corry Brick & Tile Co., Corry, Pa.—"Enclosed find \$1, for which please send your valuable paper for the next twelve months. I certainly enjoy reading your interesting articles regarding the clay industry. Trusting I may have the pleasure of meeting you in Chicago in March and wishing you a merry Christmas and a prosperous New Year, we remain."

C. E. Whitney, Mgr. Hedrick Brick & Tile Works, Hedrick, Ia.—"You will find enclosed check for one year's

subscription in advance. We are glad to say that we appreciate the 'Brick and Clay Record' very much and we believe it is doing a good work for the brick and tile men all over the country.

"We wish especially to compliment you on your exposure of the rank failures of cement in every form, and there is no doubt that it is a failure in drainage tile, and the writer knows of two cement tile plants that have quit business for the want of some one that is foolish enough to buy their goods."

Hansen Bros., Princeton, Ill.—"Enclosed find check for \$2 for which advance our subscription two years. Have been a subscriber since 1894 and think we are getting more than our money's worth."

G. A. Kampmann, Shreveport, La.—"I read your journal from cover to cover and am always anxious for the next number."

Alsip Brick, Tile & Lumber Co., Ltd., Winnipeg, Man.—"Yours of Nov. 26 at hand, and note what you write in regard to subscriptions and please note carefully. Discontinue the 'Brick and Clay Record' to Wm. Alsip, Sr., 357 River Ave., and enclosed you will find check for \$30, for which send the 'Brick and Clay Record' to W. P. Alsip, 25 Harvard Ave., five years; to A. A. Alsip, 357 River Ave., five years, and to E. L. Alsip, 163 River Ave., five years. Above is at rate of \$2 per year. W. P. Alsip to continue on from May 1, 1913."

Arthur C. Jackson, president of the National Good Roads Association.—"Your publication is certainly a great credit to your endeavors."

Wm. Strack, Walton, Ky.—"The reading of your journal gives me much satisfaction and more than pays me for the subscription price. I cannot afford to turn it down and hope you will please see that it keeps coming."

G. A. Lyon, Sec. of the Lehigh Sewer Pipe & Tile Co., Estherville, Ia.—"Kindly send us 'Brick and Clay Record' for another year. We have been pleased with the many articles in it pertaining to sewer pipe and tile. You have indeed improved the magazine greatly since combining the two and the price is certainly low."

Lonsdale Face Brick Co., Knoxville, Tenn.—"We have taken 'Brick' ever since the first issue came out, and have always thought it a very valuable journal. We wish you a successful continuation of your business."

Colonial Pressed Brick Co., Mogadore, O.—"It is with pleasure that we enclose our check for \$1.00 for another year's subscription to 'Brick and Clay Record,' for it really is the biggest dollar's worth of literature in its line. We appreciate all that you are doing to advance the use of clay products and wish you continued success."

J. H. Thress, Bayne, Wash.—"If I was getting as big value for every dollar I spend as I do for the one expended for 'Brick and Clay Record,' I would soon be wealthy. I have been in the brick business for fully thirty years and I appreciate everything in your journal and if you double on the price, you will find me still a subscriber. The trade journal is the one medium the brickmaker has for keeping in touch with the trade in the different parts of the country, and your journal certainly fills the bill."

Stockdale Tile & Brick Co., Carrothers, O.—"We are very much pleased with your journal as it is giving us much valuable information on points on which we were lame. It is certainly a very live paper and valuable to any one in the clay business. We look forward to each issue and digest each one thoroughly."



Conditions from the Atlantic to the Pacific as Reported by Our Expert Observers— Market Fluctuations and Industrial Prospects

NEWS OF THE CLAY WORLD.

The Standard Drain Pipe Co., of St. Johns, P. Q., has been reorganized under the name of Standard Clay Products, Ltd. The officers of the company are: W. C. Trotter, president and general manager; Herbert Molson, Esq., vice president; H. G. Perchard, secretary and treasurer; C. S. Trotter, of New Glasgow, assistant general manager; and H. H. Blackader, assistant secretary and treasurer. The directors are: W. C. Trotter, St. Johns; Herbert Molson, Montreal; G. H. Balfour, Winnipeg; Jas. Elliot, Montreal; S. H. Ewing, Montreal; F. W. Molson, Montreal; Lt. Col. G. E. A. Jones, Quebec; Geo. McAvity, St. Johns, N. B.; and J. P. L. Stewart, Montreal. The new company is capitalized at \$1,000,000, of which \$750,000 is paid up. The company is building a 15-kiln plant at New Glasgow, N. S., in addition to the 10-kiln plant now in existence there, and is doubling the capacity of its fire brick plant at St. Johns to increase the output of locomotive blocks, stove and range bricks, and fire clay specials. The present fire brick kiln battery consists of four kilns, but will soon be increased to eight.

R. Gangewere, who has for seven years been superintendent of the A. G. Kahn Brick Co., Selma, Ala., has severed his connection with that company and taken a similar position with the Howard Park Brick Co., at Chattanooga, Tenn. The latter plant having a capacity of from fifteen to eighteen million brick annually. The Scott system is used, the brick being made on Chambers machines and cut on a Freese cutter. Mr. Gangewere has the reputation of increasing the capacity of the Kahn plant from four and a half million a year to twelve million, with the addition of no machinery except a 5-ft. pan, which was used to grind cinders from the kilns and soft brickbats.

Wm. Plenge, a pioneer brick manufacturer of Louisville, Ky., passed away in his ninety-second year. One-half a century ago he became identified with the firm of Harlemeit & Plenge, the oldest brickmakers in Kentucky.

Concrete added another victim to its long list, when David H. Cochran in Brooklyn, N. Y., while descending from an elevated station, was instantly killed when the concrete stairway collapsed.

The new plant of the Terra Cotta Tile Co., at Ottawa, Ill., is now in operation. It is now making only drain tile but decorative tile will also likely be made later. The company has sufficient orders on hand to keep it running until next spring.

We regret to note that on account of illness, Sen. Jno. B. Rose, president of the Greater New York Brick Co., has been obliged to go south for a couple of months. We trust he will find health and strength and that he will return, ready to take up the threads of business with his customary zeal and energy.

The Tregillus Clay Products Company's plant at Ross-carrock Vale, Calgary, Can., was formally opened by Mayor Mitchell. This corporation, composed of local capitalists, is one of the leading brick companies of Canada.

The plant of the Ingelwood Brick & Tile Co., of Los Angeles, Cal., one of the largest of its kind in the Southwest, will start operation very shortly as the machinery is now being installed.

E. B. Stanley, who has for twenty-one years been connected with the Clinton Metallic Paint Co. Clinton, N. Y., as secretary, treasurer and manager, has sold out his interest in the company and will continue in business along

the same lines, independently. He will make a specialty of mortar colors, metallic paints, etc.

The Pittsburg Pottery Co., Pittsburg, Kan., received two carloads of machinery which is to be installed in the new buildings now under construction.

A new cement jail was constructed at Novinger, Mo., a few weeks ago, but when the forms were removed the structure collapsed.

Mr. Joseph Keele well known in the geological circles of the Dominion of Canada, has secured accommodations in the Mining Building at the University of Toronto, for the purpose of carrying on experimental work on clays and shales.

The T. S. Winston Co., Cincinnati, O., has been incorporated with a capital of \$10,000, after being in operation for a few months manufacturing tile.

The plant of the Holyoke Brick Co., at Williamsett, Mass., was purchased by the John J. O'Neil contracting firm for the sum of \$35,000. The new owners intend to operate the plant along the same lines.

NEW PLANTS AND ADDITIONS.

The Murray & Hart Co., at Newington, Conn., has been incorporated with a capital stock of \$50,000. The new concern will manufacture and deal in brick and clay products. The incorporators are: Richard B. Murray, Jeremiah Hart and Wm. Malarany.

Articles of incorporation were filed by the Red Hill Brick & Tile Co., San Bernardino, Cal., with an authorized capital of \$20,000. The new company will utilize the famous red hills near Upland, in making their brick and tile.

Johnson & Johnson, Raleigh, N. C., will erect a brick plant, to cost \$50,000, having a daily capacity of 100,000.

The Newman Silica Sand Co., at Massillon, O., has been incorporated with a capital stock of \$10,000. The new company will engage in the mining and quarrying of sandstone and clay. The incorporators are: E. R. Davis, C. D. Resse, A. L. Williams, John Prosner and Wm. Fashbaugh.

The Goodwin Tile & Brick Co., Des Moines, Iowa, is in the market for blowers and dryers.

The Lehigh Clay Mfg. Co.'s plant at Ft. Dodge, Iowa, has been sold to the Blackhawk Co., Davenport, Iowa, for approximately \$100,000. The Lehigh has not been operated for the last few months but it is the plan of the new owners to begin repairing the place this winter and be ready for the resuming of work next spring. Brick and tile will be made at the plant as heretofore.

The Bissett Brick Co., at South River, N. J., is making plans to erect two patent kilns which will be in operation when the season opens up.

The National China Co., of Salineville, O., has started a \$30,000 improvement which includes the building of three additional decorating kilns and a large three-story warehouse.

The Patton Clay Co., Patton, Pa., has increased its capital stock from \$150,000 to \$200,000.

The George S. Good Fire Brick Co., Patton, Pa., increased its capitalization to \$100,000.

Messrs. Allen & Schultz of Waynesfield, O., are taking bids for the erection of a tile plant at that place from private plans.

Irwin Ogden, sr., Roy, N. Mex., wants prices and catalogues of brick and tile making machinery.

Tile Works du Nord & du Pas de Calais, Rue de Lille, 175 La Madeleine Lez Lille, France, wants information in regard to machinery for "the automatic dressing off of tiles."

Geo. W. Daniels, formerly manager of the Little Falls Clay Co., Little Falls, Wash., is contemplating the erection of a sewer pipe plant.

Wm. Overton of Albany, Ore., is at the head of an organization which is planning the establishment of a drain tile plant at Albany.

It is reported that the plant of the Gulf States Brick Co., of Diana, Tex., which passed into the ownership of Col. Sam Park, will be opened again. Although nothing definite had taken place as yet, the owner stated that he would lease out the plant as a result of several proposals he received and that the lessees would arrange for installing new machinery and operating the plant to its capacity of 60,000 brick per day.

Robert and John Hartley have bought a brick plant near Phillipsburg, Pa., and will soon place it in operation.

The Standard Stone & Brick Co. suffered a loss of \$15,000 by a fire which destroyed a portion of its plant at Georgetown, O., recently. The plant will be rebuilt.

The Lynchburg (Va.) Brick Co. has obtained a charter; capital stock \$60,000. The president is H. E. DeWitt.

The plant of the Union Vestry Brick Co., at Richmond, Va., was recently damaged by fire.

It is reported that J. L. Townsend will erect a brick plant at McDonalds, N. C.

The capital stock of the Ft. Recovery (O.) Tile Co. has been increased from \$10,000 to \$30,000.

W. A. Gossett, 245 Bridge Street, Baker, Ore., wants information on the analysis of clay.

The Rossford Brick & Tile Co., at Rossford, O., has been incorporated with a capital of \$20,000. The incorporators are: C. H. Hoffman, Jules J. Mathias, Eugene Rheinfrank, Carl H. Lindecker, A. H. Hoover.

The Sanitary Brick Co., at Chicago, Ill., has been incorporated with a capitalization of \$50,000 to deal in clay products. The incorporators are A. Sabbath and J. McAndrews.

The plant of the Kansas City Terra Cotta Co., of Kansas City, Mo., has been sold and a new corporation formed under the name of the Kansas City Terra Cotta & Faience Co. The capacity of the old plant is to be doubled and the new company will employ 150 men. Improvements to the extent of \$50,000 including new kilns and additional buildings will be made. The new company is financed by E. V. Eskesen, general manager of the New Jersey Terra Cotta Co., at Perth Amboy, N. J., and P. C. Colson of the South Amboy Terra Cotta Co.

The Wheatley Pottery, Cincinnati, O., desires information as to proper methods and machinery for the manufacture of glazed brick. (Think they mean enameled brick.)

The Peerless Brick Co., of Lebanon, Pa., suffered a \$1,500 loss by fire.

The Dresden Brick Co., of Detroit, Mich., has been incorporated with a capital of \$20,000, to manufacture brick. Ralph and Herbert Spencer are the principal stockholders.

NEW YORK.

New York, Dec. 26.—January first has little significance for the eastern brickmaker, commercially. But from the standpoint of retrospection and prospecting it is a most important occasion. First and foremost, it is the occasion for centering hopes upon the prosperity of the coming year, while secondarily, it permits of a careful survey of the year just closed which generally is taken as a basis for computing the probable behavior of the twelve months to come.

There are reasons why the 1913 season looms big, not because the long continued open winter weather has permitted builders to eat deeply into the North and Raritan river reserves; not because the producers contemplate

the strict regulation of output; not because the speculative builder contemplates wholesale operations in this district; but because the whole market will be thrown back bodily upon the old, safe and sane basis of supply and demand.

Elsewhere in this issue will be found a full exposition of the reasons why the eastern brickmaker has cause for anticipating big things and showing what he is doing to meet them. This letter being a report of general market conditions, must consider conditions only as they are known to exist.

These conditions are, primarily: a generous inquiry for new building construction; a speculative tendency on the part of the dealers with a conciliatory attitude assumed by the distributors, a limited supply of brick left in shed but with a wise control being exercised over what is there; a better understanding between certain warring factions, the lack of which has caused the North river district to suffer severely in the recent past; and a record engagement for building money, running well into 1914 despite the higher rates of interest on mortgage money which probably will become effective shortly after the first of the year.

Big Inquiry for Building Materials.

There is undoubtedly a big inquiry for building materials. The heavy advance orders for structural steel running on deliveries well into the third quarter of 1913; the fact that stone quarries have been heavily sold on spring supply; the fact that architectural terra cotta companies and fireproofing concerns are operating their plants at day capacity, while some are working extra shifts at night; the fact that lime producers talk of putting up their prices solely because the demand both present and prospective is so heavy and lastly, the fact that brick dealers in the whole district of fifty miles around New York have heavier stacks than they are wont to carry at this time of the year; all present sound reasons why there is going to be an exceptional building year in 1913 and that it will begin early.

Whenever the speculative element in building material markets anywhere begins to assert itself, look out for boom conditions. What is happening now? Look at the pig iron reports. This is the safest and surest barometer as far as consumption of common brick and general building clay products is concerned. No. 1X Foundry is now quoted at 18.50c, tidewater and Southern No. 1 Foundry at 18.25c. A year ago at this time it was 17.75c and was considered high. At that time, last year, there was an unfilled tonnage of structural steel of 5,900,000 tons. This year there is an unfilled tonnage estimated at between 7,000,000 and 8,000,000, and only this week the independents tried to smash the prevailing price level and force it higher than the present \$30 per ton level. In 1911, eastern spruce timber was quoted at \$22. Today it is \$28 per M. ft. for B. M. Lime in 1911 was 90 cents. Today it is 92 cents. Brick in July, 1911, was \$6.75 per M., wholesale, and today it is \$7.50 per covered M. These prices represent a general upward movement. That is why the speculative interests have been running into the market. The result is that iron, steel, timber, lumber, tin, paint, common brick or whatnot are reporting low mill stocks at this inventory time and so it is safe to assume that supply and demand will run neck and neck with the opening of the new year.

It cannot be said that the distributors have been backward in encouraging these conditions. The Greater New York Brick Co. had its bargain sale because its customers needed their barges to ship more brick into the market. The steel corporation has had to sit on the safety valve for the last three months and even then it has not wholly succeeded in shutting off price advances as was shown by the action of the American Steel & Wire Co., in announcing an advance of a dollar a ton this week and now boiler tubes will advance within a week or two. Nails already have advanced, all of which shows the tendency which has been carefully noted by the speculator and he has been in the market heavily. All this has had an effect on the brick market and is bound to affect it still further.

Of course the big distributors here have been blamed for boosting the dealer's game from the viewpoint of the producer and the dealer has been accusing him of boosting the game of the producer, thus keeping the brick jobber very much on the job, but between two pretty hot

fires. But happily a better understanding is prevailing among these two warring factions although the millennium has not come in this particular field of endeavor yet, by any means, but when a dealer deliberately sends a good big bottle of fine old Bourbon to an officer of the organized selling company with best wishes for a Merry Christmas and general good feeling enclosed only to be unloosed by the simple process of pulling the cork, and another dealer sends another officer of the same company a handsome stag handle cork screw with a similar message, there certainly would seem to be some cause for expressing the belief, at least, that a clearer understanding of the two factions in the big Eastern market is a-borning.

Up the river there is a wise control being exercised over the dispensing of the available supply of brick. The Raritan interests are keeping pretty mum on the subject of their available supply, but it is given out on very good authority that their stacks have been pretty heavily drained during the long spell of open weather and free navigation to this market and that they are in no better position than the North river fellows. At any rate they too, are keeping a protecting arm around their marketable supply.

Now for the last and most important factor in the eastern market. The heavy money engagements totalling more than \$239,000,000 for new construction in the Metropolitan district between now and February 1, 1914, must not be forgotten. This is \$19,000,000 more than in previous years, and it does not represent all the prospective building by any means. Railroad work, bridges, and many industrial building operations are not included and neither is the big Equitable building down town which itself will take more than 6,500,000 common brick.

The Eastern market is keenly alive to its opportunity, but it is a question as to whether the producer realizes his chance. Is he prepared to get greater efficiency out of his plant and machinery? He'll probably need all the reserve capacity he has before next season gets well into its gait. Some already are putting this tip into action. Are you?

PHILADELPHIA.

Philadelphia, Pa., Dec. 20.—This year has been a very good one for the clayworking industries, here, the building trade has been active, which has kept the brick plants going in pretty good shape. At times money matters have not been as good as might be and considerable credit has been asked in order to carry out the ideas of the promoters. Common brick has been holding up very well in price and the demand all the year has been good. Enameled, front and fancy brick have also sold very well. The demand for fire brick picked up in the fall and has been very good, due to the activity at the steel plants. Paving brick has had a good year and conditions are very good. The use of brick for paving is gaining headway in many cities as its good qualities are being recognized more and more.

Now that the country is settling down from the activities of the feverish election, many are wondering what will be done to the tariff and how it will affect each branch of the clayworking lines. On the brick trade the tariff would, of course, have no direct effect but it would be seriously affected, indirectly, if many lines of trade were hampered or hurt, through competition with the cheap labor of Europe, where in many countries, the average wage is 50 cents to one dollar a day. It would also affect in the same way terra cotta, fireproofing materials, sewer pipe and other lines. But as to pottery, tile and various novelties made, there is great fear of a reduction of duties, which would make a direct loss to the trade. These lines can not stand any reduction of duties and the trade is decidedly against it. Tile is made much cheaper in European countries than at Trenton and the wages are only about one-third and, in Japan, are about one-tenth or one-twelfth of those paid here. Japan is now producing pottery lines, with the American style of decoration, that the Trenton manufacturers can not begin to compete with. The Japs are making pottery, sending it to this country, and after paying a duty, can undersell the Trenton factories and the Japs in many cases can

turn out the finished pottery at a cost about equal to the cost of the materials alone in this locality. A few years ago the English, French, German, Austrian, and Italian people had a good run in this country of fine Belleek, bone china and there were no competitors here. Since that time these lines have been developed quite largely in America and plants are turning out a high grade ware that will compare favorably with that made in any foreign country.

Terra cotta has been in good demand this year and is keeping right to the front. Fire proofing materials are recognized as standard lines for the modern buildings. The demand for sewer pipe has been moderately good.

In fine Belleek, art china lines, and the novelties made for jewelry and department stores and other similar branches, the trade has been greater every year and these articles made of clay have been gaining in favor. They present a neat, attractive appearance, are very hard and do not break easily as they are subjected to great heat in the making.

The Independent Brick Selling Co. of this city and Trenton, has changed its method of manufacture at its No. 1 factory at Bordentown, N. J., from end-cut to a side cut. This plant is turning out a very fine straight, hard and stretcher brick. It recently furnished 500,000 brick for the residence of J. H. Sinex at Delanco, Pa.

A recent move has resulted in the formation of the largest producer of vitreous hotel and restaurant pottery in the country in the consolidation of the Shenango China Co. and the New Castle (Pa.) China Co., with headquarters at New Castle, and the combined plants will be under the management of Joseph Smith, of the first named company.

The Atlantic Brick Manufacturing Co. of Mays Landing, N. J., has operated to capacity this year and sold its product mostly in Philadelphia.

Edward C. Stokes of the Harrison building, is furnishing sewer pipe for a state contract at Cresson, Pa., and a city contract at Salem, N. J.

L. V. Halverstadt of the Reading (Pa.) Shale Brick Co. has taken over the Royalton shale brick plant and will make extensive improvements to the property.

J. Perry Lukens of the Mint Arcade has had a very strong demand for soft glazed vitrified sewer pipe.

Otto G. Raymond has left the sales office of the Hydraulic-Press Brick Co. of Baltimore, Md., and has assumed the management of the face brick and terra cotta department of the Buffalo Builders' Supply Co. of Ellicott Square, Buffalo, N. Y.

The Shepherd brick plant at Hammondsburg, Pa., has been purchased by Donely Bros., Washington, Pa., who will greatly improve the plant. This plant was owned by Michael Shepherd for a decade.

R. Ingersoll of Atlantic City, N. J., who owns the Egg Harbor City (N. J.) brick manufacturing plant, has spent thousands of dollars on improvements and has had plenty of orders this year.

Warren Griffiss has succeeded Samuel R. Busey as general manager of the Baltimore (Md.) Brick Co.

The Dolon Crucible Co. is a new firm organized here to manufacture crucibles from German clay and graphite from Ceylon. The stockholders are Joseph P. Dolan, D. Clarence Gibboney and Daniel W. Holloway.

Donahoe & Nolan of Trenton, N. J., make a specialty of special moulded and ornamental brick and are one of the few firms in this country making such ware, which is made from special designs and finds a ready sale in New York and Philadelphia.

The Independent Brick Selling Co. of this city is now representing the Detroit (Mich.) Roofing Tile Co. which makes a shale tile; the Kittanning (Pa.) Clay Manufacturing Co., which turns out the iron spot face and Devonshire brick; the United States Roofing Tile Co. of Parkersburg, W. Va. which also makes shale tile.

The Canonsburg (Pa.) Pottery Co. has enlarged its plant by building one more large kiln and six decorating kilns.

The Ironside Pottery Co. of Bordentown, N. J., has had a full force working and finds a ready market for its product.

Charles T. Meyers, who was formerly the local man-

ager of the Atlantic Terra Cotta Co., is now at the New York City office.

John B. Myers, of Lock Haven, Pa., is at the head of a new brick company at New Hope, Pa.

The Spring Brook Water Co. has bought the brick yard of John A. Schmitt of Wilkesbarre, Pa.

B. Dawson Coleman is at the head of a new brick company at Harrisburg, Pa.

The plant of James C. Dobbs of Collingswood, N. J., who died a short time ago, is being operated by the executors. S. B. Dobbs, his son, is one of the largest brick dealers in the East, operating at Philadelphia, Baltimore, New York, Washington and Atlantic City, N. J.

The Stifler & Brown brick plant at Darlington, Pa., which burned during the summer, has been rebuilt.

Edward J. Stokes moved his offices from the Land Title building to the Harrison building, owing to the increasing business, which demanded larger quarters. He does a large business in sewer pipe and has furnished some large orders in Pennsylvania and nearby states. Business has been good with him and he is optimistic as to the future.

THE PACIFIC COAST.

San Francisco, Dec. 23.—A comparison of this year's building records in California cities with those of 1911 leads to the conclusion that far more brick must have been sold during the past year than in any similar period for some years previous. In this city, every month but one shows a substantial increase over the same period of 1911, with a total gain of over \$2,000,000 for the year. In Los Angeles, though two single months showed a lower record than last year, there was an increase for the entire year of nearly ten millions. Oakland and San Diego show an extremely heavy increase, while Sacramento, Fresno, and many smaller places have surpassed former records by a substantial margin. There is no indication that activity will be curtailed in any of the other cities, while in San Francisco the preparation for the Exposition and the construction of the Civic Center buildings give fair assurance of a further increase.

Notwithstanding these apparently encouraging figures, the brick interests of San Francisco, on the whole, do not consider that the last year has brought any material improvement in volume of business. They regard conditions as not above normal, and while there is a fair degree of optimism for the future there is a notable absence of extravagant hopes in this industry. At Los Angeles and some outside points conditions are somewhat different, a marked scarcity of common brick having been reported at Los Angeles during the early fall.

The principal trouble in the San Francisco Bay district and northern California seems to be the old one of overproduction, or at least potential overproduction, with a degree of competition which prevents prices from responding to an increased demand. It must be admitted, also, that there is some rather irresponsible competition in some lines, as a number of plants have been installed in this district within the last few years by people lacking necessary experience, as well as capital. While some concerns of this type have passed through reorganizations, it is impossible to find a profitable outlet for the entire output, and doubtless many years will elapse before the requirements of this district can overtake the producing capacity.

For some time previous to the summer of 1911, the greatest complaint was from the common brick manufacturers, who refused to limit their output and found prices very unprofitable. Now, however, the greatest dissatisfaction is among the producers of terra cotta and pressed brick, but their position is at least no worse than a year ago. They feel disappointed, however, on account of the comparatively small amount of work last summer, when they were looking for something approaching a boom.

The principal feature of the year in this city has been the building of hotels and apartments, ranging in value from \$50,000 to \$200,000. Pressed brick and terra cotta is extremely popular for this class of work, which has probably been the backbone of the business. Some good sized office buildings have been erected, but in these, as

well as the large number of warehouse and factory structures, there has been very keen competition between brick and other materials. It is notable that the great apartment house district between Van Ness avenue and Powell street, largely vacant a year ago, is now pretty well built up with permanent buildings. The district along Market street to the north is almost solidly filled, and south of Market the vacant areas have been greatly reduced.

From start to finish of this year, the local common brick market has been held on a steady basis of values, and prices are expected to at least hold their own for the coming year. A slight advance was made early in the spring, but the quietness through the summer did not warrant any further advance, and further improvement is hardly possible before spring. The volume of business, on the whole, has probably increased a little, but in view of the enormous producing capacity this is hardly noticeable. Prices have only been held at a paying level by holding down the output, and finding an outside market for such surplus lots as have accumulated.

Awakening to Importance of Publicity.

One favorable indication is the gradual awakening of the brick men to the importance of publicity and missionary work. The latter is now efficiently handled, for the sewer pipe men, by the Pacific Clay Products Publicity Bureau, Frederick C. Davis, manager, and for the brick men by the Brick Builders' Bureau, in charge of Nat Ellery. These organizations give their energy to getting in personal touch with all persons, firms or municipalities contemplating large work in which clay products may be used, and setting forth the merits of their materials. While progressive manufacturers have come to regard this work as of the highest importance, stronger support is needed to bring out the greatest efficiency, and it is hoped that for the coming year, the manufacturers will fully realize the necessity of keeping up the publicity campaign.

Frederick C. Davis, manager of the Pacific Clay Products Publicity Bureau, says there is a steady demand for clay pipe at normal prices, though competition constantly tends to force prices downward. This, he says, is partly compensated for by finding means of reducing the cost of production.

Gladding, McBean & Co. report that there is a great deal of building at present, with a consequent good demand for architectural terra cotta and pressed brick, though they cannot see that there has been any notable improvement over 1911, or that there is more figuring now than a year ago.

The United Materials Company, representing the Los Angeles Pressed Brick Co.'s plants at Los Angeles and Richmond, Cal., and the Port Costa Brick Works (manufacturer of common brick), say the year has been about the same as 1911 in volume of business, with fair indications for the future. The Richmond plant has added a new kiln during the year.

Mr. Gwin, of N. Clark & Sons, says: "The past year has been at least as good as 1911, and the way work has been coming out for the last month indicates that the new year may be somewhat better. The impetus given by preparations for the Exposition is keenly felt. We are constantly improving our plant, adding new kilns, etc."

C. Hidecker, of the Ione Fire Brick Co., says: "We have maintained our normal output throughout the year, market conditions in fire brick showing little change. The only opportunity for much growth in the demand for fire brick is in a general expansion of Coast manufacturing industries, which have always labored under serious handicaps, and show little indication of improvement."

THE TWIN CITIES.

Minneapolis, Minn., Dec. 20.—The prospects for 1913 in the brick trade are bright enough, as regards consumption, but the real question is not so much consumption as it is that of price. There has been such keen competition in the trade that it becomes a considerable question whether it is worth while to make brick at the figures that some have sold at. During the years when

business was good enough to absorb all that were made, some manufacturers found it profitable to hold back from the market when low prices were being made, in the expectation that after the low figures had absorbed all the stock which those accepting them had, the next move would be to supply the remainder of the demand at a price which allowed a reasonable profit. So long as the demand for common brick was large enough to absorb all production, this plan worked very well. But when the demand lessened through competitive materials cutting into the field sharply, and the consumption of brick being reduced in other ways, the result was that those who did not break into the market early and often, had liberal reminders of their retiring disposition in the shape of extra liberal stocks carried over. This has been the case during the past year or so to such an extent that there is a concerted move under way to attempt to market the local production through a single selling agent, pro-rating all sales in ratio to the amount made as against the amount sold.

Yet the prospects are so much better than they have been that this plan seems to be rather belated. There is need of it, and it would result in advantage to all concerned, if it could be effected and adhered to. But present prospects for the new year for the brick trade are materially better than for several years. There is more large building in sight now than for some time. To be sure, a portion of the big work is still running to concrete, but even then, many use curtain walls of brick, which makes some demand for brick. But there are numerous structures of different kinds in view and anticipation, which will not be of concrete and will include considerable quantities of brick. There should be a materially heavier demand for common brick during the winter and especially during the spring, than has been the case in several years. Should the spring be prolonged, as it sometimes is, there will doubtless be a shortage of common brick and prices will go to figures which will be a delight to the trade and a novel sensation as compared with experiences during the past two or three years.

Wasted opportunity marks the general situation in the trade, as regards any effective and active campaign toward pushing brick in the Northwest. There are a few individual firms which have done good work at it. The advertising of the national association has also done some good in the Northwest because of its general character. The Clay Show likewise helped some, but the credit must be given to the few individual firms which have always been enterprising in this respect, and to outside influences.

There is one feature which will go a long way toward helping solve the question, and that is the education of bricklayers through trade school courses. As things now stand, bricklayers' wages have reached a serious disproportion with other trades, and this alone diverts business to other materials. If there were a reasonable number of bricklayers, the wages would hold a fair average with other trades, and there would be more work for all and more net profit for all.

INDIANA.

Indianapolis, Ind., December 22.—Clay product interests have had a prosperous year in Indiana and especially in Indianapolis. Building operations have exceeded all previous records, there has been more sewer building than for many years and the large number of office, hotel and other business buildings that have been erected during the year have increased the demand for hollow tile and terra cotta. Every clay product man in the state, apparently, is satisfied with the year's business and is looking forward to increased business in 1913.

The end of the year finds most of the brick plants running and with prospects good for continuing operations throughout the winter. Sewer tile manufacturers and dealers are behind in their orders owing to the unusual demand and the car shortage. Tile prices are approximately forty per cent higher, based on net prices, than they were a year ago. Brick prices are satisfactory and steady with no prospects of an early decrease.

Figures obtained from the city building inspection department as to the construction of brick, non-fireproof

structures and fireproof structures during the year, show plainly the prosperity local interests have enjoyed. This year, to December 20, permits were issued for 99 brick non-fireproof buildings and for 47 fireproof brick buildings. For the year 1911, there were 87 permits issued for brick non-fireproof buildings and 42 permits for fireproof brick structures. The record has been as follows:

—NINETEEN HUNDRED AND TWELVE*—

	Brick, non-fire.	Fireproof.
January	\$ 16,050	\$ 27,500
February	4,500	5,780
March	61,500	123,500
April	211,890	345,000
May	123,900	112,000
June	60,250	None
July	407,525	400,000
August	125,300	231,200
September	197,000	168,500
October	126,300	143,100
November	63,560	65,000
December	125,300	133,500
Total	\$1,523,095*	\$1,755,080*

—NINETEEN HUNDRED AND ELEVEN—

	Brick, non-fire.	Fireproof.
January	\$ 6,000	\$ 10,000
February	31,300	21,800
March	49,900	443,000
April	129,000	83,200
May	48,000	53,600
June	75,275	237,500
July	63,000	44,400
August	62,000	66,000
September	135,250	24,100
October	41,525	282,600
November	37,000	15,700
December	17,450	462,578
Total	\$695,700	\$1,744,478

"We have had a very prosperous year," said a representative of the Western Brick Co. "While our business possibly during the last year has not exceeded that of 1911, it has at least been as good and the outlook is very encouraging for next year. At the present time, contracts we have under way include 1,000,000 face and common brick for the Robert W. Long Hospital, 1,000,000 common brick for a new school building in Brightwood and 2,000,000 common brick for two ward units being built at the city hospital. Among the large contracts we have had during the year have been for brick for the Merchants Bank Building and Washington Hotel, both of this city, for a large addition at the New York Central Shops at Beech Grove and for buildings at St. Marys-in-the-Woods' school near Terre Haute."

A representative of the Adams Brick Co. said: "Taken as a whole, our business this year has been better than in 1911. There has been less small building and much more large building during the year. Prices are good and they are steady; furthermore there is no prospect of brick prices declining in the near future. We believe that next year is going to be a prosperous one in the brick trade."

"The sewer tile trade in Indiana has been the best in many years," said J. H. Zinn, manager of the local office of the William H. Dee Clay Manufacturing Co. "The demand has been good and so have prices. At the present time prices are about forty per cent better than net prices of a year ago. The car shortage has kept down deliveries, and I am advised that sewer tile factories and dealers are hundreds of cars behind in their orders."

Thomas A. Winterrowd, city building inspector, has submitted to the city council an ordinance incorporating a building code to succeed that which has been in effect since 1904. One of the features of the new code is that it limits the height of buildings to 200 feet. All buildings in the fire limits, according to the proposed code, must be of fireproof or slow burning construction. All buildings over six stories high must be fireproof and all buildings 100 feet high and over must have metal sash and trim.

The Modern Apartments Corporation, organized recently, has acquired a site in Pennsylvania street between St. Clair and Pratt streets on which it will erect a five-story apartment house at a cost of \$300,000. This will be of brick and steel construction, trimmed with terra cotta. M. V. Wiggins, president of the Crescent Paper Co. is president of the concern.

The trade is said to be prosperous at Brazil. The Brazil Hollow Brick & Tile Co. is enlarging its plant and installing machinery to make silo brick. The American Sewer Pipe Co. is making an interlocking brick to be used in the building of large trunk sewers.

CANADA.

The Acme Brick Co., operating a plant six miles west of Edmonton, Alta., will increase its present output of 75,000 brick a day to 250,000 early in April, the additions and improvements costing \$250,000. New departments will be equipped to manufacture partition and floor tiling. The company, which has been in business for five years, supplies its products to builders in Edmonton and the nearby district.

Ten cars of material and machinery are already on the ground, and eight more are on the way. A direct radiated heat drier, one of the most modern machines of its kind, has already been installed at a cost of \$20,000. There is also being installed a pulverizing machine with a capacity of 40 cubic yards of broken brickbats, cinders and ashes which are to be used as grog.

A special excavator is also being erected at a cost of \$12,000. The iron work of this machine weighs 70,000 pounds. The excavator will do the work of 40 men. The bank from which the clay is taken is 40 feet deep, and there are several strata of clay which require to be mixed. The working force of 40 men will be increased to 100 as soon as the plant is completed. The company is erecting cottages near the factory for working men with families. The management has also set aside a plot of ground for park purposes.

Negotiations are under way looking to the construction of a spur from the St. Albert interurban railway to the property, for the purpose of hauling brick to Edmonton. The plant is also close to the main line of the Canadian Northern railway.

The directors of the company are: William Cannell, president; J. H. Millar, vice-president; Robert Spencer, secretary; A. E. Jackson and J. St. Clair Blackett, directors; J. E. Wallbridge, solicitor. J. P. Henry is acting manager of the plant.

THE PITTSBURGH DISTRICT.

Pittsburgh, Pa., December 20.—Brick manufacturers in the Western Pennsylvania district, while admitting that they were very well pleased with the volume of business for 1912, are of the opinion that the new year will produce a larger volume of business than during the past twelve months. In several instances, however, the manufacturers have reported that prices were not what they should have been, but that this condition was due in the main to some fierce competition on certain jobs which bordered almost on the "cut throat" policy. This month, so the story is told, there is a tendency all along the line to procure better prices, and this tendency is expected to prevail during the coming season.

The possibility of the erection of a joint city and county building by the City of Pittsburgh and Allegheny county, during the coming year, is looked upon with favor by the brick manufacturers, for this new construction means the use of millions of building and common brick. This large improvement program is now being given serious consideration by city officials and the County Commissioners, but before the construction program can go through it is possible that a special act will have to be passed by the Pennsylvania Legislature during the January session at Harrisburg.

Ground for this building has been bought, and the bond issue has been disposed of, the money is waiting, and plans for the building have about been completed. This is the biggest job in sight in Pittsburgh at this time for the new year.

Home building in the suburban districts has been at its height during the last year, and hundreds of new homes are planned for the early spring building program. More brick is being used for new home construction in the Pittsburgh district now than ever before.

Large clay products companies, such as the American Sewer Pipe Co. and the Harbison-Walker Refractories Co., and the National Fire Proofing Co., report a successful business year. Any amount of orders are now on the books for future delivery, and this means that the

plants of all three corporations will be on the real active list throughout the new year.

The plant of the Wyoming Valley Brick Co., at Breslau, Pa., was recently purchased by Matthias Stipp, a well known brick manufacturer of Scranton, Pa. It is said \$15,000 was paid for the property, which boasts a daily output of 30,000 brick. The plant, which has been inactive for some time, will be placed in operation immediately.

Because of the winter season being on, the plant of the Edward H. Snyder Brick Co., at York, Pa., has suspended operations for the time being. During the season just closed, the company is said to have marketed nearly two million brick.

At Stowe, Pa., improvements and changes are being made to the Frank Davidheiser's brick plant, which will increase the capacity to 30,000 per day.

From Ridgway, Pa., comes the information from the new owners of the plant of the Ridgway Brick Co., that the plant is being enlarged and improvements added which will increase its capacity considerably. John T. Johnson formerly operated this works.

John Reed, Jr., a well known brick man of Pittsburgh, has just been elected manager for the A. J. Hawes Brick Co., at Cambria City, Pa.

A small fire at the plant of the Peerless Brick Co., at Lebanon, Pa., caused a loss placed at \$1,500, which was covered by insurance.

It is reported that because the Watsontown Brick Co., of Lock Haven, Pa., was so rushed with business, and could not get out brick fast enough for a street paving contractor, the latter had to suspend work on his contract until he could get enough brick ahead.

Robert and John Hartley, until recently associated with J. Swires in operating the Guion Mines near Phillipsburg, Pa., have bought a brick plant near there, and will place it in immediate operation.

It is reported here that the plant of the Hydraulic Press Brick Co., at Winslow, Pa., will close for six weeks, to permit the completion of repairs and improvements to the property, after which operations will be resumed.

A two mile spur from the main line of the Southwest branch of the Pennsylvania railroad is being built to the plant of the Royal Brick Works at Spruce Hollow, in the vicinity of Connellsville, Pa. It is estimated that this work will cost \$60,000. The brick plant has a daily capacity of 40,000 but with the completion of the spur track, the capacity will be increased to 70,000 per day. The Royal Brick Co. is headed by F. M. Ritchie, of Connellsville, Pa.

James Olay, for 13 years chief brick burner at the plant of the Ridgway Brick Co., at Ridgway, Pa., has resigned to take a similar position with the Johnsonburg Brick Co.

OHIO.

Columbus, O., December 22.—A shortage of brick is said to exist in the vicinity of Cleveland. It is said this shortage has run as high as 100,000 a day at times. E. A. Roberts, secretary of the Builders Exchange at Cleveland, in commenting upon the alleged shortage, declared that the shortage exists not only in Cleveland, but in many parts of the state. C. G. Barkwill of the Barkwill Brick Co., of Cleveland, has declared that the shortage in brick has existed throughout the past summer and fall.

The brick business of the Hocking Valley Products Co., of which Daniel Reagan is president, has been working its plants to capacity throughout the past season, and the demand for the company's product is increasing steadily. This company has begun the construction of ten residences at Glendale, O., for the use of its workmen. These houses are being built from different grades of brick manufactured by this company. The idea of building these homes is said to be to make Glendale attractive to the employees of the company.

Glazed brick, such as are manufactured by the Stark Brick Co., of Canton, O., will be used in the erection of the new school house at Massillon, O., the contract having just been closed. While glazed brick will be used for interior work, the Everhard iron spot brick will be used for exterior work.

The capital stock of the Fort Recovery Tile Co., of Fort Recovery, O., has been increased from \$10,000 to \$30,000. Excellent progress is being made upon the construction of the new brick and sewer pipe plant being built at Toronto, O., by the Kaul Clay Co., of Toronto. It is possible the plant will be ready to operate within the next three months. Toronto, O., capitalists are interested almost solely.

E. A. Neff has returned to his offices at Bryan, O., from a recent convention held in Columbus by the Ohio Tile and Clayworkers' Association. Mr. Neff is the treasurer of the association.

The Helm Brick Co. is the name of a new Ohio clay manufacturing concern which has started the building of a new plant in the vicinity of Barnon Hill, at Logan, O. The plant will have a capacity of 50,000 brick per day, and employ about 60 men.

According to a report from the offices of the Klay Clay Co., at Orrville, O., enough business is now booked to clean up all present year stocks.

During the first week of December all the clay mines in the vicinity of Malvern and Oneida, O., were inspected by Mine Inspector Thomas Morrison.

The Whitacre Fire Proofing Co., of Waynesburg, O., has completed the erection of its new fire proofing plant, and placed it in operation. The firm is one of the best known manufacturers of that line of clay products in the eastern central part of Ohio.

According to views held by Governor-elect James Cox, of Ohio, who by the way is a well known newspaper owner at Dayton, O., there is a brick combine in Ohio, and as soon as he takes office he plans to sink the probe. Much "information" has come out of Akron during the last few days anent the alleged brick combine, according to reports from that place. Therefore, the following, from the Akron Beacon-Journal, is given for what it is worth:

"There is no doubt but that such a combine flourishes in this state," said Director of Service Pillmore this morning, "and here in Akron we meet with all sorts of difficulties as a result of such a combination. The price of bricks is kept sky high, and contractors who are not in good standing with the combine are impeded and hampered in every way possible in their work."

"The combine exists in Akron," declared City Engineer Gehres this morning. "It is impossible to buy brick here from the manufacturers directly. All must come through a central office in the Hamilton building."

"Samuel Cooper of the Cooper Brick Co. declared that he knew nothing of the existence of such a combine."

"If there is anything like that in this state I never heard of it," he said this morning."

THE PACIFIC NORTHWEST.

Portland, Oregon, December 20.—The "made at home" movement, and in this instance the "Made in Oregon" convention, has been quite in the public eye for the past month. The Manufacturers Association of Oregon held an annual meeting, at which all the manufacturers of Oregon were represented, and we are pleased to state that several of the Oregon brickmakers were present. At the banquet held at the Commercial Club, it was fully demonstrated that the Oregon people are fully awake to the idea of protecting home industries and good results are sure to come from this movement. The earnestness of the association was demonstrated, recently, by the fact that President W. H. McMonies and Vice President T. S. Mann of the association addressed a communication to Mayor Rishlight and the City Executive Board, urging that Oregon manufactured building material be used in the new city jail and all other municipal buildings. This letter stated in part: "In connection with the specifications for brick for the new buildings, we understand that they call for a size of brick that will not allow Oregon brickmakers to compete for the contract and practically assures the award of the contract to a Seattle manufacturer. In this connection we wish to state that the Oregon brickmakers have invested in the state of Oregon over one million dollars and give employment to over

500 men." Mr. T. S. Mann, the vice president of the Manufacturers Association, is also president of the Pacific Stoneware Co., and in him, the clayworkers of Oregon have a very warm supporter.

Several large new buildings have been projected for the coming year. The Northwestern Electric Co. will erect at once a modern twelve-story office building. The old Marquam building, which was built some twenty years ago entirely of masonry, will make room for a new steel building, which the Northwestern Trust Co. is now erecting.

The Pacific Face Brick Co. of this city, whose plant is located at Willamina, has secured some nice orders the last few weeks. They will furnish the white brick for the new City Hall at Grants Pass, a new five-story hotel building at Roseburg, and buff brick for the new six-story Hemmel Hotel and gray brick for a new bank building, both the latter being at Albany, Oregon.

The Newberg Brick & Tile Co. will furnish their "Newberg Reds" for the library at Oregon City, several high schools throughout the state and also the brick for the new University Club at Portland.

A vast deposit of Fuller's earth, which has been found along the foothills to the east of the city of Ellensburg, Wash., is now being worked and material to the amount of two carloads per week is being shipped to Seattle. This earth, composed of silica, alumina, magnesia and iron, has a remarkable power for absorbing oil or grease and is an excellent nonconductor of heat and cold. The output is being used in Seattle as a filler for asbestos pipe covering. The claim now being worked is from eight to fourteen feet in depth and is close to the surface. The mine is located some fourteen miles from the railroad and the company intends to put in motor trucks on the road next spring to increase the output. V. C. Denny, with C. Fontane and Ed Justice, all of Ellensburg, control the company.

The Columbia Brick Works is now making partition tile and has been very successful in its manufacture at its Gresham plant. Headquarters are maintained in Portland. This company is one of the largest and most progressive brick manufacturers in the state.

The two brick yards operated by the Field Bros. of Eugene are both in operation and the company finds a ready demand for all the brick it can manufacture.

The soft mud brick yard at Donald, Oregon, made over 200,000 brick the last summer and these brick are of good quality. The company intends to enlarge the yard next spring and change from horse power to steam.

There is a considerable demand for enameled brick and so far no local factory has been able to supply a good commercial article. Two carloads of enameled brick were recently shipped from the Hydraulic Pressed Brick Co. of St. Louis to Astoria for a new bank building.

P. T. Harbour, the manager of the Weston brickyards, was in Portland recently and visited some local yards. His company made over two million brick last season.

Geo. W. Daniels, who has been manager of the Little Falls Fire Clay Co. at Little Falls, Wash., for a number of years, has severed his connection with that company and is contemplating the erection of a new sewer pipe plant in the near future.

A new drain tile factory will be established at Albany, Oregon, with William Overton, formerly manager of the brickyard of J. T. Wentworth, Albany, as the head of the new enterprise. A number of prominent business men of Albany will be associated with him. The new company has secured an option on a tract of nine acres lying a short distance east of the city on which is found a large deposit of brick and tile clay.

Judging from what the writer has heard, there seems to be very little co-operation among the clayworkers of the Pacific Coast. In speaking of the next Clay Show at Chicago, some manufacturers show a decided lack of interest and so far as participating is concerned, very few will make exhibits and few will be the members of the Pacific Coast craft who will make the trip across the country to see the show. In order to bring the clayworkers of the Coast more closely together there should be some organization effected. We know of some clayworkers who visit the different cities of the Pacific Coast and always make a friendly call among the different

fellow brickmakers, but we also know a lot of them who will not even recognize a fellow brickmaker when meeting him. Such a situation does not produce good results and something should be done. Every brickmaker should make it a point, when visiting a strange city, to look up all the brickmakers in that place and get acquainted and exchange ideas and pull together.

THE SEATTLE DISTRICT.

Seattle, Wash., Dec. 20.—Mr. Brewster, manager of the Abrahamson Brick Co., states that its business this year has been very satisfactory so far, but is not so brisk just now. He says the business outlook for 1913 is extremely good. This can also be said of the Lohse Brick Co., the Harper-Hill Brick Co. and the Washington Brick, Tile & Paving Brick Co. This last yard is managed by C. W. Byers, who was formerly superintendent of the Carquinez Brick Co.'s plant at Porta Costa, Cal. Mr. Byers also constructed a continuous kiln this spring for the Sydney Island Brick Co. of Sydney Island, B. C., which has proven to be very satisfactory.

F. W. Harper and F. Lohse, managers of the Harper-Hill and the Lohse Brick companies' plants respectively, are the two happiest looking brick-makers operating in this district, for the reason that business has been so good with them. All the yards mentioned are situated so as to get the benefits of cheap transportation by scow to the British possessions and other water points. Canada business seems to be very much on the up grade, and the unusual demand from our sister country has been very helpful to these yards.

The yards, however, that have had to depend on local business have not been so successful. There has been too much to contend with. A demand which fell off easily sixty per cent, and a production which increased correspondingly. Among the yards affected by these conditions I might mention The Builders' Brick Co. This yard has not manufactured one-half the brick that it did in former years. The time has, however, been spent in developing a fireproofing and tile plant, which is working now fairly well.

Mr. Merkel, of the American Clay Machinery Co., who has the reputation of being the best trouble man in the country, gave the company great help in planning and advising. Those who became acquainted with Mr. Merkel, either in a business or social way, were very loth to see him depart. Men of his type are a Godsend to any brick-making community, and the American Clay Machinery Co. is to be congratulated upon having such an efficient man in its employ.

Taking each brickmaker's opinion, publicly expressed, they can be summed up as follows: Abrahamson, Lohse, Harper-Hill and the Washington Brick & Tile Co.: "Satisfactory, and the outlook good, caused by the cheap water transportation to a good market." Builders' Brick Co.: "Lots of business, prices low, margins close, hard work absolutely necessary." Lake Union: "Plant shut down; do not know when it will start up again. Business not satisfactory." Pontiac Brick & Tile, of which Mr. D. F. Powers is president: "Business very unsatisfactory, prices too low, demand very light, outlook not very promising." Seattle Brick & Tile Co.; Mr. Robert Niedergesaess, president. Mr. Niedergesaess says: "What is required is a continuous heavy downfall of rain, so that it will make it impossible for any brickmaker to operate, then things will be better for all." He will get his wish. Mr. Goss, of the F. H. Goss Brick Co., Tacoma, says: "I have made up my mind to go back to my old business of contracting." Mr. Goss has a large high school to build in Tacoma.

Speaking of building schools, I can safely affirm that 90 per cent of the builders who have built schools in Washington have unwillingly and unwittingly made greater or lesser donations to the several school districts. I hope Mr. Goss will be an exception to this rule.

The Far West Clay Co., according to the general manager, Mr. Eastman, has had an unusually good year and has nearly all next year's work ahead on Dennison interlocking tile. The Standard Brick & Fire Clay & Sewer Pipe Co. is making preparations to rebuild its sewer pipe plant at Sopenah. Talk about optimism, Joshua Pierce, the president of this company, who is 74 years of age, has

got everything in this locality beaten in that line, and then some.

The Denny Renton Clay & Coal Co., according to W. A. Lumsdaine, the sales manager, has had a very satisfactory business. This concern, we believe, is the largest on the Coast and undoubtedly deserves to be commended for its progressiveness. Mr. J. R. Miller, who is the general manager, is certainly to be commended for its great success. The company has an annual payroll of over \$1,000,000.

In regard to the Clay Show, there are a number of larger concerns that should exhibit, because they undoubtedly could make a very creditable showing, that would compare favorably with any of the products put on exhibition by any of the eastern manufacturers. Among the number are: The Denny Renton Clay & Coal Co., Seattle; Washington Brick, Lime & Sewer Pipe Co., Spokane, Wash.; Western Clay Co., Portland, Ore.; Clayburn Brick & Tile Co., Clayburn, B. C. The Northern Clay Co., Auburn, Wash., could also send some very fine terra cotta. This company specializes in this line of ware. Then there are the face brick manufacturers: The Pacific Face Brick Co., Portland, Ore., and the Coast Shale Co., of Bellingham, Wash. Now, the balance are in the common brick and fireproofing business and while they wish for the show all the success possible, they do not feel that they could make good enough showing to justify taking up the space which would be necessary to put on said exhibit. The Standard Clay Co. of Tacoma is also a very large company, but, as you know, one of its units, a large sewer pipe works at Sopenah, was totally destroyed by fire, and under these circumstances hardly think it would be advisable to ask it to exhibit, although it could make a nice showing with paving brick from its Bayne, Wash., plant.

There are quite a number of new concerns making preparations to try their luck next year in British Columbia and the Northwestern Provinces of Canada. E. J. Shaw, of the American Clay Machinery Co., has captured the lion's share of this business, and he is busier than a whole hive full of bees. W. C. Mitchell has succeeded in his promotion plans. Morehead & Carmichael, financiers of Victoria, B. C., succeeded in interesting a large French syndicate, which has taken over all the holdings. Mr. Mitchell has been retained as manager. The plant will be situated on Mayne Island, B. C., and the company be capitalized at one-half a million. I am informed that there are over 60 plants now operating, or nearly ready to operate, in British Columbia.

Mr. Cecil Ridge has resigned as manager of the Lake Union Brick Co.'s plant, Seattle. This plant is closed down for the time being.

Mr. Raymond Bond, who formerly represented the Raymond Machinery Co. in this section, was a visitor in Seattle last week. He is now a full-fledged brick manufacturer and has our sympathy. His plant is somewhat embryonic as yet, but great results are expected. Mr. Bond as a brick salesman has no superior. Brick salesmanship is an art in itself.

KENTUCKY.

Louisville, Ky., December 21.—A review of reviews in the clay-working industry of Louisville and Kentucky indicates that the old year was one of a type seldom experienced in this part of the country and possibly never before equalled. In all respects save one, the situation was flavored with the greatest possible degree of prosperity. The one exception seems to have been that in the state at large and particularly in Louisville, there have been barely enough brick and tile to go 'round.

Viewing the past twelve months with the passive eye of one whose funds border on the plethoric and whose interests are in healthier shape than they have been in years, as a matter of fact since concrete and other competitive materials gained so strong a foothold, the Bluegrass clay-workers have had fewer difficulties to encounter on account of competition from competitive materials, experienced during the past year. Old 1912 was certainly not typical of a grand sweet song in a commercial way, for there were a number of unfavorable features in the way of car shortages, material famines, political turmoil and consequent indecision on the part of build-

ing capital to be overcome, but the success following the building boom of 1911-12 and what promises to be the boom of 1913 may not be denied.

There are plenty of specific illustrations of the general high tide of trade to be found. Local clay-working interests, with the exception of one large concern whose stockholders have decided to withdraw from the field as soon as possible, are in fine condition. The state trade has prospered to a degree far exceeding that of any recent year, and the outlook is uniformly bright both in Louisville and Kentucky. In the Gateway City alone, two prominent new concerns have been born during the past few months, owing their conception to the undoubtedly bright future that is promised in the signs of the times. When so many business men, merchants and manufacturers alike, declare that they see in 1913 a genuine, old-fashioned business year of the type which means universal expansion in commercial interests, the clay products concerns which owe their business to building activity cannot afford to remain inactive.

In Louisville alone, during the past twelve months, building has been undertaken which is valued at upwards of \$7,000,000. A goodly percentage of this work has been completed. A certain proportion is under roof, and ready for the finishing touches. Still a third part is just being commenced. The aggregate of \$7,000,000 worth of building surpasses by about \$1,000,000 the hitherto unsurpassed record of 1911.

Between 20 and 25 per cent of the city's outlay for structural purposes during the year has been for brick and brick-work. This means that 1912 has produced an expenditure of from \$1,400,000 to \$1,750,000 for clay products and the labor necessary for this sort of construction. Statisticians among the clay-workers have figured that between 75,000,000 and 100,000,000 brick were sold in Louisville during 1912, and that a residue of possibly 25,000,000 has been sold but remains to be delivered as early as possible in 1913. A considerable portion of this business was in shipments to points in the State and in Southern Indiana, subject to a building boom which local clay-working industries found it impossible to handle unaided by the plants of the metropolis. There was also a certain class of business represented by outside brick plants shipping their product to Louisville for use on special jobs.

A great number of Kentucky brick companies, in fact, as many as ever before within a single year, have made extensive improvements in their yards, and have filed amended articles of incorporation authorizing increases in capital. In Louisville two new enterprises have developed, one of them a branch project of an established local concern and the other a brand-new proposition designed to produce and market brick and other clay products upon a large scale.

The 1912 building boom has effected all that was expected of it in Louisville. Impressive traces of its course may be found upon practically every thoroughfare in the down-town district and in many suburban portions. The new City Hospital, an institution costing approximately \$1,000,000 and conceded to be one of the biggest and finest of its kind in the world, has been nearly completed. The tallest structure in Louisville, the 18-story home office building of the Inter-Southern Life Insurance Company, has been opened for occupancy. The Henry Watterson Hotel, one of the newest and finest hostelrys in Louisville, was completed and formally opened last summer. The Tyler Hotel was finished early in 1912 and the Weissinger-Gaulbert Apartment, a ten-story structure, was also completed a few months ago. The new \$300,000 home of the Young Men's Christian Association, the 11-story home office building of the Great Southern Fire Insurance Co. and the 15-story Starks building, which will possess more floor space than any other structure in the Bluegrass metropolis, are under way. The 25-story home office of the Southern National Life Insurance Company, which has been designed by Joseph & Joseph, will be erected during 1913, becoming the tallest building south of the Ohio river. The National Theater and the stores and offices to be included in that structure, costing \$500,000 in all, will also be erected during the new year. Joseph & Joseph also figuring as the architects in this job. The Kentucky Distilleries & Warehouse Co. will buy about 2,000,000 more brick during 1913, supplementing a similar order which it placed in 1912, as the concern proposes to complete what will be the largest whisky warehouse in the world, holding 300,000 barrels of liquor.

Add to these big jobs the multitude of residential and smaller business construction now afoot or already planned in the Falls City, and you have the situation affecting Louisville brick and tile manufacturers. It is hardly correct to describe 1913 as a building year which will outstrip all its predecessors, as 1912 surpassed 1911 and as 1911 in turn outclassed all its predecessors, but it is a certainty that there will be all the business the clay-workers are capable of handling, just as this enviable condition has ruled for so many months in the past.

Immense quantities of terra cotta for the new \$1,000,000 City Hospital, the 18-story office building of the Inter-Southern Life Insurance Company and the 15-story Starks building have provided the more prominent features of the 1912 trade of the Kentucky Vitrified Brick Company. The plant at Ninth street and Magnolia avenue has been running to the limit of its capacity during the past twelve months, and a fine stock of material is now on hand to provide a nucleus for operations during the new year. Several of the 1912 contracts of the company were such that they demanded every foot of terra cotta and every vitrified brick that could be produced at the plant, and it is confidently expected that new plans such as these will be harvested during 1913. The Kentucky Vitrified Brick Co., which was unfortunate in losing several thousand dollars through fire in the dryer a month or so ago, is repairing the damage completely, and will utilize, fire-proof tile instead of wood or iron-clad frame in replacing the dryer sheds and stacks.

With the Southern Brick & Tile Co., of Louisville, the old year practically doubled the ability of its predecessor to produce business. An improvement of almost 100 per cent is revealed in the business of 1912 as compared with that of 1911. The Southern Company found absolutely no difficulty in disposing of its "crop" of 8,000,000 brick during the year, and at no time has it had less than three crews of drain workmen employed in setting Southern tile on jobs in the surrounding counties. Among the big jobs of the year in which the company figured were the new City Hospital, consuming about 2,000,000 common hard brick; 750,000 face, hard and black-headers for the Henry Watterson hotel and several hundred thousand hard for the Inter-Southern Life building.

The piece de resistance of the old year with Owen Tyler was the contract which he secured for furnishing \$20,000 worth of handsome buff face brick to the new City Hospital. The model institution on Chestnut street is faced with beautiful buff brick made by the Hydraulic Press Brick Co., of Brazil, Ind., of which Mr. Tyler is the local representative. General business with the Jefferson-street builder's supply dealer shows a healthy improvement for the past twelve-months, and he is inclined to view the future with supreme optimism. Mr. Tyler is at the head of interests which will erect a 12-story annex to the new Tyler Hotel, a handsome local hostelry which is barely a year old but which has made such a success that the extensive improvement is demanded.

Big Company Will Dissolve.

That the Hydraulic Brick Co. will not resume active operations in the local trade and that it will dissolve as soon as the sale of its properties is effected and a settlement of the proceeds among its stockholders may be made, is the most recent and final announcement of A. J. Jungermann, president of the pioneer local concern. The stockholders of the company have decided to withdraw from the brick industry permanently, and are desirous of realizing what they can through the sale of the two yards still held by the concern, one at Twelfth street and St. Louis avenue in Louisville and the other in Lockland, Ky., eight miles south of the city on the Illinois Central railroad. The Central and Southern yards of the Hydraulic, as they are known, will be sold as soon as possible and the corporation is to be dissolved immediately thereafter. The two yards are in excellent shape, possessing extensive clay banks, and are equipped to produce 150,000 brick per day with ease.

The Hillenbrand Brick Co., of this city, came into existence May 17, 1912, when it purchased what was formerly the Eastern yard of the Hydraulic Brick Co. The Hillenbrand interests began operations July 29, 1912, and since that time, according to their report, have been flourishing. Within six months and with a single yard, the new concern has made and delivered to its customers about 2,500,000 brick. Specializing in high-grade face for residences in the Highlands, the yard has been working

to capacity limit since the whistle blew upon its rejuvenation in July. The new year looks so good to the Hillenbrand Brick Co. that provisions for additional capacity are to be made and facilities will be provided for the manufacture of both octagon and black-headers. A "SSS" brick machine, made by the Arnold-Creager Co., of New London, O., is to be purchased and installed in the near future.

CHICAGO.

Chicago, Ill., Dec. 30.—A year of unprecedented prosperity is the record established in 1912 by clayworkers throughout the state of Illinois, despite the fact that business was greatly handicapped in the beginning of the year by the extra long severe winter that postponed all operations until late in the spring. Had work been started at the usual time, manufacturers say that 1912 would have been a world-beater, due to the extraordinary number of sky-scrapers now under construction in this city. Orders in large volume are pouring in, even up to this late date, with no signs of any letup. The general trend of the prices has been very satisfactory. The most encouraging feature of the clay industry is the outlook for the new year, which is unanimously believed by clay manufacturers will far exceed the past twelve months in volume of business and 1913 will, it is believed, mark the beginning of a new era in the uses of clay products.

The splendid weather conditions prevailing for the past two months has been an important factor in sustaining these wonderful activities. Never before have building operations continued up to such a late date without having to be stopped for one day. The temperature has been most agreeable and building has not been hindered by a single snowfall.

With the exception of the fuel oil situation, the brick makers have encountered very few obstacles during 1912.

Mr. Reed, president of the Chicago Retort & Fire Brick Co., states that business with his company, for the past year, has been extremely pleasing. New additions and improvements now being made to his plant, which double its former capacity is an indication of the confidence he has in the coming year. The plant will be in readiness to start work, when the season opens up.

The Clay Product Co., with its plant in Brazil, Ind., which only three months ago was burned to the ground, will be in position to start work about the latter part of February and the company announces that it is now in every way and its output will be greater than that of the former plant.

"The paving of streets at this time of the year is something that has not been possible for many years," says Mr. Irwin Corneau, Chicago sales manager of the Purington Paving Brick Co., Galesburg, Ill., "and work will keep right on if this kind of weather continues."

Business during the twelve years he has been connected with this concern has always been good, but the sales for 1912 show an increase over all former years. In fact the only difficulty he discovers is the supplying of paving brick fast enough to satisfy the consumer and at one time during the past summer, so many orders were booked, he received instructions not to take too many orders.

Mr. Corneau says: "There are good roads projects on foot, all over the country, and people are beginning to realize more than ever the advantage of brick for paving purposes. The field in our home state is a very large one and many city commissioners look upon this product as the coming material for city streets as well as country roads."

There is a lot of room for improvement of roads in the state of Illinois, and Mr. Corneau states that on making a tour of the bordering states he was surprised to see that this state had the most abominable roads of any of the surrounding states.

The company will close its plant for a short time, during the winter, in order to give it a complete overhauling but operations will be resumed immediately after the work is finished.

"While business for 1911 was very good the past twelve months have shown an increase of fully ten per

cent over the previous year and the indications are that 1913 will even improve on these figures," says Mr. Wm. Schlake, president of the Illinois Brick Co. He further states that "the universal feeling of prosperity enjoyed by all brick manufacturers and the confidential manner in which they look upon the coming season lends a helping hand toward making 1913 a banner year, because a general state of depression always tends to make business worse than it really is. Chicago is only starting to rebuild the down-town section and will keep on tearing down the old 'shacks' and replacing them with modern up-to-date buildings until the entire loop is rebuilt and will be a fit business market for a city of this size."

Taken as a whole the season has been one of prosperity to Chicago clay men.

TEXAS.

Austin, Texas, Dec. 12.—An increase of activity in various lines of building trades during the month of November is shown by the record of building permits issued in nine of the principal cities of the state. With the beginning of the winter season, construction work of various kinds has taken on renewed activity and it is expected that not only the closing two months of the present year, but the first three months of 1913 will have shown a very material increase in the value of new buildings erected over the corresponding months of 1911-1912.

During the month of November, the total value of buildings for which permits were issued for the cities of Dallas, San Antonio, Houston, Galveston, Fort Worth, Waco, Austin and Beaumont was \$1,461,869, which was an increase of \$204,410 over the preceding month.

Nearly all of the cities and towns of Texas are having a remarkable residential growth. This is particularly true of Austin and El Paso. Most of the new residences are of a distinctly modern type of architecture and interior design, as compared with that in common vogue only a few years ago. Much more attention is given to residential surroundings than formerly. One of the chief features to be considered in locating and erecting a new residence is its sanitary possibilities. There is also a widespread movement in Texas for improvement in civic conditions. As a result of this agitation residences are now erected with the point in view of beautifying their surroundings by artistically designed and well kept lawns, walks and road beds.

The brick manufacturers of Texas have had, on the whole, an unusually good year. Most of them report large increases in their trade and many of the plants, in order to meet the growing demand for their product, have made improvements and enlargements. During the year quite a number of new brick-making plants were established. This is particularly true of those portions of Texas which are undergoing rapid settlement and development. One of the features of the building trades that has had an important bearing upon the brick making industry is the general adoption of a better type of business buildings in the cities and towns. This condition applies even to the smallest of the towns, some of which have been on the map perhaps for only a few months, but are able to boast brick business buildings of substantial and attractive character.

There has not been as much done in the paving brick line as might have been expected. This trade, however, is said to have been very satisfactory, and with proper and concerted effort on the part of the men who are interested in that branch of the business a very large increase in the demand for this class of brick may be expected during the ensuing year.

It is not noticeable that tile manufacturing is beginning to take its proper place among Texas industries. It is only during the last few years that the use of drain tile has been adopted to any extent in this state. Several brick making plants now operate tile machines in connection with brick manufacture. In the Gulf coast region and the lower Rio Grande there promises to be an enormous demand created for drain tile during the next few years. It is stated that farmers and land owners, generally, of those portions of Texas, are beginning to realize that one of the essential needs of their properties is proper drainage. Wherever irrigation is practiced in the state it is found necessary to drain the soil of its surplus water in order to keep up its productiveness.



BRICK

and CLAY RECORD

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VIEW OF THE LAST CLAY SHOW AS SEEN FROM A GALLERY IN THE COLISEUM





VOL. LXII.

CHICAGO, JANUARY 15, 1913

Number Two

EXPECTS 250,000 ATTENDANCE AT CLAY SHOW

Exposition Management Receives Optimistic Reports from all Sections — Manufacturers Show Activity in Securing Space for Exhibits — Secretary Hopley Plans Many New Features

By A STAFF WRITER



MORE than a quarter of a million visitors are expected to attend the Second Annual Clay Show at the Coliseum, Chicago, during the twelve days it is to be opened to the public, February 26 to March 8, inclusive. These figures, believed to be a conservative estimate, are based on optimistic reports received by Secretary Hopley of the Clay Products Exposition Company.

The attendance last year was 100,000 with 1,500 clay manufacturers and dealers included in the list. Responses from the various clay associations assure a still heavier attendance of their members than at the first show, and it is safe to say that fully 2,500 persons directly connected with the clay product industry will be among the visitors.

With this great attendance and a far better show than last year, Clay Products will receive a boost such as it never before has received in any country.

The management of the Exposition is profiting by the experiences gained in the first show, and, while the event last year was everything that could be expected and far exceeded general expectations, the Second Annual Show is going to eclipse any previous exhibit held to give publicity to an industry or trade.

Secretary Hopley and the board of directors have been busy all through the year planning and preparing for the Exposition, and the Chicago Face Brick Association, the Chicago Clay Club and other local interests who are giving the Show their support, realizing that this is the last Exposition they will have the opportunity to guide for several years to come, have left no stone unturned, no opportunity unseized, to make it the hugest success of any industrial show ever held at the Coliseum.

At this writing more than double the applications for

space by exhibitors has been secured than at the same period last year and there is every likelihood that every inch of available floor space will be secured before the doors of the Exposition are opened February 26.

Last year there were several important branches of the industry not represented, but this will not be the case at

the Second Annual Show. Doubtful of the ability of the management to conduct a successful show last year, many progressive manufacturers refrained from investing in exhibits. This will not be true next month, as they know now what can be done, and every one has the utmost faith and confidence in the promise to give even a greater show this year than last.

One of the most encouraging features of the coming Exposition is the interest our foreign cousins are manifesting. Several important branches of the industry across the ocean

will be represented by interesting displays, and the foreign section will be one of the attractions of the Show.

Plans for the Show practically have been completed, although there are a few minor details to be considered. The decorations for the Coliseum and the architectural arrangement of the various exhibits have been determined upon, and the great building will be a wonder in color, harmony and design.

The most elaborate exhibit so far planned is that of the Chicago Face Brick Association, that sterling organization of local brickmen who have worked so faithfully and unselfishly to make the two shows a success. It has planned to expend more than \$20,000 on its exhibit, which will be one of the first to greet the eye of the visitor as he enters the Coliseum.

The display will be located immediately in front of the main entrance and will occupy more than twenty spaces. On either

SOME NUTSHELL FACTS ABOUT SECOND ANNUAL CLAY SHOW.

TIME—From February 26 to March 8, 1913, inclusive.

PLACE—Coliseum Exposition Building, Wabash Avenue, Chicago.

EXHIBITS—Those who have engaged space for display purposes have from Feb. 19 to Feb. 26, which is equivalent to 21 eight-hour days or seven days without overtime.

ATTENDANCE—It is estimated that 250,000 visitors will be in attendance against 100,000 last year.

CONVENTIONS—The annual meeting of the National Manufacturers' Association and the sessions of other National and State organizations will be held during the show at headquarters selected at the Congress Hotel.

OFFICERS—R. C. Penfield is president and F. L. Hopley, Chamber of Commerce Building, Chicago, is secretary.

side of the entrance the visitor will see artistic pergolas—made of brick, of course. Immense columns will mark the beginning of these pergolas, and a fountain on either column will lend a decidedly artistic effect in combination with the special lighting.

Between these two pergolas there will be a wide walk leading up to a towering old English gate. Through this the visitor will enter the main display room. Before this gate there is to be a sunken garden and pool.

The members of the Chicago association have shown a most unselfish attitude in the display, submerging the personality of each individual firm. While there will be panels of brick displayed along the sides of the pergolas, there will be no identifying mark of the manufacturers or the sponsors for the same.

A simple sign, in harmony with the general arrangement of the display, will announce that the exhibit is that of the Chicago Face Brick Association, but no other banners or signs will be shown.

The members of the association intend to make their exhibit really a part of the Exposition, and a boost for facing brick, no matter where made, rather than an appeal for direct profit or gain.

Architects and draughtsmen have been at work on the plans for the exhibit for several weeks, and a sketch showing a portion of the pergolas and the main gateway is reproduced elsewhere in these pages. It is to be understood, however that a perspective drawing such as this is cannot show all of the exhibit in one picture, and the handsome pillars that mark the entrance are not indicated.

Those who have seen the detailed plans of the exhibit pronounce it the most daring ever attempted by any one set of exhibitors at any industrial show in the history of the United States.

The entire decorations of the Exposition will be in harmony with the Chicago Face Brick Association display, and with the thousands of electric lights that will give the illumination, a most gorgeous effect is promised. Those who saw last year's Clay Show and pronounced it a marvel of architectural beauty and the acme of artistic arrangement may attend this year with the promise of seeing even a greater marvel in clay products.

Novel Entertainment Provided.

The Clay Show management has made extra efforts to provide for the entertainment features. In addition to some of the best attractions of last year, there will be added many new features that will lend interest to the Exposition.

One of the most entertaining and instructive of these will be the "Moving Picture Arcade." This, like all the other

features, will be free to the visitors at the Show. A special section has been set aside for the "Arcade" in the Coliseum Annex. Unlike most "side shows" in other industrial shows, the "Arcade" will be especially constructed of brick and be one of the pleasing features of the Show.

It is proposed to have a regular entertainment of moving pictures both day and night. A special lecturer will be in charge and give an instructive discourse on the pictures which, in the main, will bear on the clay product industry in all its various phases.

The Exposition management has gone to considerable expense to have special films made of the actual operation of clay plants in the various branches of the industry. Pictures will be displayed showing the process of manufacturing brick, tile, sewer pipe, terra cotta, pottery and all the other products. In addition to this there will be an original love-story and comedy pictures built around clay products, of course, each picture pointing a moral.

It is the idea of the management that these pictures will prove a great educational feature for the masses of the visitors who really know nothing of burned clay.

The Fire Prevention exhibit of the City of Chicago is to be another very interesting feature. Practical lessons in the prevention of fires will be given and, of course, Mrs. O'Leary and her

famous cow, who took such a prominent part in the destructive conflagration that all but razed the city in 1871, will play a part in the exhibit.

Then there is the "Potter at His Wheel," an unusually attractive exhibit. There are many clay workers who never have seen the actual operation of this branch of the industry, and it is certain that few of the general public know anything of it.

Another feature will be the "Clay Modelers." This same feature was introduced last year, and it proved such an interesting part of the Exposition the management has decided to repeat it. Students from the Chicago Art Institute, under the supervision of one of the most noted sculptors of the country, will be in this booth both day and night, modeling in clay from life models.

Workingman's Home to Be Shown.

Probably one of the most attractive features will be the workingman's home, which will be constructed inside the Coliseum. Last summer when the City of Chicago was considering the extension of the fire limits as a means of preventing another serious fire there was considerable opposition to the movement because, it was said, that it would force the workingman to relinquish his home and move to the cheaper and more distant portions of the suburbs.

It was argued that a fireproof house meant a brick house, and the average workingman could ill afford to spend the



Frank L. Hopley, Secretary of the Exposition Company.

\$20,000 EXHIBIT OF CHICAGO FACE BRICK ASSOCIATION



money necessary to construct a brick house. This argument had considerable to do with the fire limitations.

The Exposition management proposes to show that a cozy little brick home can be built of brick at a cost not to exceed \$2,000. This building will be erected in the Coliseum, and every portion of the building will be of burned clay as nearly as possible. The Exposition Company is defraying the cost of the structure, but the Chicago Examiner has offered to buy a \$1,000 lot, and the two have been offered to the winner in a popular voting contest that is being conducted by that paper. The award of the prize will be made during the Clay Show.

"The China Hospital" is another new feature. It will be presided over by a noted China surgeon, and he will have a full staff of assistant surgeons and a corps of skillful nurses. Major and minor "operations" will be performed daily, and it is very likely that this booth will prove a decidedly attractive one, as there are many owners of rare and valuable bits of pottery or china who have considered them hopelessly lost because they were badly broken. These surgeons take the broken vase or pot and restore its original symmetrical beauty with a deftness that is wonderful. Even missing pieces are replaced, and the completed operation defies the most critical eye.

These features, however, are only a few of those that have been arranged for, and Secretary Hopley declares that he has many others under consideration.

The main attraction, however, so far as the clay manufacturer is concerned, will be centered in the exhibits of burned clay.

Last year practically every section of the country was represented by exhibitors, and this year will be no exception. As a matter of fact, there is not a state in the Union that will not have a representation, and some of the states will make a special effort to bring elaborate and expensive displays.

Among the individual exhibits there will be displays from as far west as the Pacific Coast and east as far as Maine. The South will be ably represented and, of course, the Middle West, the very center of the clay industry, will have a full representation. Canada, too, England, Germany, Norway, Sweden and Austria will send exhibits, and their booths alone will prove worth while seeing, for it will be the first opportunity for many American clay workers to see how their cousins across the ocean do things.

While many clay manufacturers last year recognized the importance of the Clay Show as a means of creating a demand for burned clay in a general way and as a means for making direct sales through their exhibits, as was evidenced by the large number of individual exhibits, the success of those exhibitors has proven to hundreds of others the folly of not taking advantage of their opportunities, and the result is that the list of individual exhibitors this year far exceeds that of last year and the old exhibitors are using increased space in many cases.

"Brick and Clay Record," firmly convinced of the value of publicity as a means of creating a demand for burned clay and placing it where it belongs—at the head of all building and construction materials—has been very much interested in the Clay Show. It has taken the trouble to communicate with the old exhibitors, and the replies received disclose that the writers are very enthusiastic as to the value of the Show.

In the hundreds of letters received, there has not been one discordant note. Practically every exhibitor told of the great good their exhibits, as well as the exhibits of others, accomplished for them in a general way, and many spoke of actual cash returns on their investments that were many times greater than the cost of their exhibits.

One manufacturer out on the Pacific Coast told how his exhibit was the means of a deal with a prominent dealer whereby he sold his entire output during the past year.

Another manufacturer in Indiana wrote that he went into the Show with misgivings. He was doubtful of the DIRECT benefit he would receive. "I expected to get some returns, of course, from the general publicity the Show assured us," he said, "but I did not expect to make any actual sales, or to be able to place my hands on actual dollars that came from my exhibit. I was agreeably surprised, however, with the results. Immediately after the Show I began to receive inquiries from people all over the country who had seen my exhibit. Some of these inquiries came as late as six months after the Show, thus proving that the impression gained at the Show was lasting. The wide area covered by these inquiries gave evidence of the widespread influence the Show had and proved that we had visitors from all parts of the country.

"Out of these inquiries I secured a number of profitable agents, and these agents have actually sold brick for me, and that's what counts."

THIS IS WHAT SOME EXHIBITORS DID AT LAST YEARS' SHOW



"Bradford Reds" Displayed by the Bradford (Pa.) Pressed Brick Co.



Neat Exhibit of Building Brick of the Bach Brick Co., Chicago, Ill.

This manufacturer's experience is only one of many. If an attendance of 100,000 will bring results to exhibitors, what will an attendance of 250,000, such as is expected at the Second Show, do?

The first Clay Products Show marked a new era in the progress and development of the clay industry. Its importance, its extent and its beauty far exceeded the expectations of its most ardent supporters. It was the first public demonstration of the merits of burned clay that has ever been made in the country, and every member of the industry can feel proud of the creditable manner in which the products were displayed before the world.

The Clay Products Exposition was pronounced by all who saw it the most beautiful and wonderful show that has ever been seen in Chicago or any other city, representing a single great industry. Its effect upon the public as a means of education will be nation wide, and the show has cemented together the individuals of this industry and brought about an enthusiasm for increased publicity and effort along this and similar lines that will result in an immense increase in

the annual consumption of our products.

The newspapers of the country appreciate the importance of the industry as they never have before, and thousands of columns were published by them relating to the exposition and the industry, and thousands of additional columns were published during the past year. The importance of this event was such that before the show ended Chicago had found an active rival for the next exposition.

Edwin P. V. Rittder, president of the Merchants and Manufacturers' Exchange of New York City, came to Chicago especially for the purpose of making an effort to secure the next show for his city. He came too late, however, for a vote had previously been taken in the convention of the N. B. M. A. to hold the 1913 convention of that organization in Chicago, in connection with the second Annual Clay Products Show. New York was, however, given the promise for the show in 1914.

While the various conventions of the national associations of clay manufacturers held during the "Big Week" were of great importance to the trade, yet it was generally admitted



Artistic Display of Common Brick Shown by National Brick Co.



The Wm. E. Dee Display of Sewer Pipe, Fireproofing, Etc.

that their value was greatly increased because of their being held at the same time and in the same city as the Clay Products Exposition, and they alone could never have brought together such a record-breaking attendance.

The clay interests were especially honored by the visit of the President of the United States to their exposition. President Taft's arrival at the Coliseum was one of the big events of the week, and his address was a marked compliment and a splendid tribute to the clay industry.

Nearly 600 clay workers sat down to the grand banquet in the Gold Room of the Congress Hotel Annex and listened later to the stirring address of ex-Secretary of the Interior James R. Garfield. This was one of the largest attended and most beautiful banquets ever held in Chicago, and certainly surpassed anything in the history of the N. B. M. A.

The immediate practical benefit of the Clay Products Exposition was especially apparent to the exhibitors, and there is not one of them who has anything but satisfaction to express regarding the outlay of time and money required to make such an exhibit. Architects from all over the country attended to see for themselves the possibilities in building

pressed to me their amazement at and admiration for the beauty and practicability of the entire display.

"When it is considered that this exposition is but the first step in a great international movement which is to be made in behalf of burnt clay products—here it may be said, in behalf of the welfare of mankind generally—it is astounding how nearly the results approached the ideal.

"Considered aesthetically, the individual exhibits were fully up to the standards established by International Expositions. Never before has the story of what burnt clay, in its various forms, is contributing to the creation of a beautiful and enduring architecture in America been so graphically told, and it is my humble opinion that the results will be written large in the work of the future.

"To the men of Chicago who have given of their mental, physical and financial resources, to assure the success of this undertaking, to the members of the claycraft generally, who have responded to the call, I say you have proven yourself worthy of your chosen calling."

Those who have had no intimate connection with the preparation of a great industrial enterprise of this kind cannot



Silo Exhibit Made by the Mason City (Iowa) Interests at Last Year's Show.

construction through the use of burned clay building materials. Many cities and towns sent official delegates, and the municipal displays were visited by hundreds of city engineers, street and highway commissioners and other officials.

Arthur D. Rogers, publisher of the architectural magazine, "The Brickbuilder," has accomplished splendid results in keeping before the architects the importance and merits of brick as a building material. Mr. Rogers, in an interview shortly after the last show, said:

"When the cement interests of this country inaugurated their publicity campaign in behalf of concrete, it did seem for a while as though a fellow was short on common sense if he did not use that material for breakfast foods and false teeth, as well as for pianos. Anyhow, this campaign served one purpose if nothing more; it aroused to action the great clay products interests of this country, which for years had lain dormant. This awakened interest was made manifest at the Clay Products Exposition, which has just closed at the Coliseum.

"I am credibly informed that the attendance and interest on the part of the general public in this exposition has never been excelled in any show of whatever kind, or wherever held. Architects and draftsmen who already have an intimate knowledge of building materials of all kinds, have ex-

appreciate the thousands of details and the vast amount of labor and effort which it involves. The preparatory work in connection with the first Clay Products Exposition began nearly a year prior, when the exposition company was formally organized, and offices opened in Chicago.

Following the initiative steps taken at the Middle West Convention in Chicago in February, 1911, and the endorsement of the idea at the N. B. M. A. Convention at Louisville immediately afterward, a half dozen men identified with the clay industry shouldered the responsibility for financing the project, and it is due to these men and their energy that the show was made possible. A large sum of money was required to pay the preliminary expenses involved in such an enterprise, and this money was cheerfully furnished by these men, without any expectation of receiving financial returns, and purely as a means for furthering the interests of the industry.

As was to be expected, while the exposition idea appeared to meet with general approval, when it came down to the actual securing of suitable exhibits of clay products, there was more or less hesitancy shown because of the uncertainties as to the value of the enterprise, and much of the effort of the exposition officials was expended in interesting clay manufacturers, and in filling the Coliseum floor space. When



Many Varieties of the Famous Natco Hollow Tile Displayed by the National Fire Proofing Co.

the exposition opened, however, on the evening of March 7th, not a single foot of available space was vacant.

The actual work of the construction of the show was commenced on Saturday, March 2nd, and during the following four days the Coliseum presented a scene of the utmost activity. An army of 1,000 workmen were employed, several hundred of them being expert masons, and in those four days the Coliseum was like a bee-hive, work being carried on, night and day to permit the erection of this collection of structures, which ordinarily, under usual building conditions, would require at least many weeks to erect.

It was a "Magic City" and its erection was like a tale from the "Arabian Nights."

From the confused mass of thousands of tons of brick, fireproofing, tile and burned clay materials of every kind, timber and mortar and all the various requirements in building work, there arose quickly an artistically arranged substantial array of imposing structures, expressing the utmost variety of original ideas and architectural effects. The center-piece of this magnificent display was a beautiful terra



Archway Made of Sewer Pipe, Portion of the Exhibit of the Blackmer & Post Pipe Co.

cotta tower, which was part of the exhibit of the Northwestern Terra Cotta Co. Radiating from this on either side of the main center aisle were the four broad aisles running the entire length of the Coliseum, along each of which were arranged the individual and joint exhibits covering a total floor space of 70,000 square feet.

The Coliseum is the largest exposition building in the country, and it housed the great Republican National Convention. It has a seating capacity, including the galleries, of 20,000. Much attention had been paid by the management of the Clay Show to the artistic arrangement and decoration of the building. A thousand flags decorated the lofty arched ceiling, and artistic decorative pieces, hundreds of potted plants and other features created a most inviting and attractive effect.

Throughout the exposition, Hand's famous concert band, one of Chicago's leading musical organizations, discoursed enlivening music. Every convenience for the visitors had been arranged for, including a complete cafe in the basement.

As previously announced, the prize brick bungalow was



One of the Most Attractive Exhibits Shown Last Year Was that of the Everhard Co., Massillon, O.

the "star" feature of the show. This handsome structure was built from the prize-winning design in the architectural contest conducted by the exposition company through the publication, "Brickbuilder." It was built complete on the floor of the Coliseum in four days' time—a record in such construction work. Its walls were of common brick faced with one of the most popular types of rough faced brick. Its roof was covered with clay tile of a dark green shade, and the large space in which it stood was enclosed by a substantial brick wall, inside of which a lawn and garden had been artistically laid out. The interior of the building was complete in almost every detail and ready for occupancy. The large living room contained a handsome brick fireplace, while the kitchen was beautifully tiled with white enamel brick.

A large glass flask filled with toy clay marbles was shown, on which all who paid admission to the show might make a guess as to the number of marbles contained in the flask. Nearly 6,000 people made guesses on this, the estimates ranging from 1,600 up to upwards of 20,000. The flask actually contained 12,505 marbles, and there were thirteen people who guessed the number to be 12,500. Mrs. H. C. Leemon, 9206

ONE OF THE ATTRACTIVE DISPLAYS AT 1912 SHOW



Splendid Showing of the Dunn Wire-Cut-Lug Brick Co. in the Paving Brick Section.

Commercial Avenue, Chicago, however, proved herself to be the best guesser of all. Her estimate was 12,502.

From the moment that the doors were opened on the evening of March 7, until 9:30 on the evening of the following Tuesday, the Coliseum was constantly thronged with visitors during the open hours. At many times this throng was so great as to make it difficult for the people to view the exhibits, the aisles being packed to their very utmost capacity. On the last evening of the show many visitors were actually turned away. The interest in the show seemed to be prevalent among all classes of the population of Chicago, and added to the local attendance were thousands of visitors, called here by some special interest in the exposition, or because of the conventions here, or who happened to be visiting Chicago on other business. The registers at many exhibits showed large representations from every state in the Union, and these people carried the story of the show back with them to their homes and assisted in spreading more information about the country regarding the merits of clay products.

TO ENTERTAIN VISITING CLAY WORKERS.

The Chicago Clay Club, which will be remembered by the visiting clay workers at Chicago in March, 1912, has retained its organization and will take charge of the entertainment features February 26th to March 8th during the Second Annual Clay Products Exposition, the Twenty-Seventh Annual Convention of the N. B. M. A., and allied associations.

At a meeting held January 10th, the following officers were elected:

William Schlake, president; B. F. Weber, first vice-president; H. L. Matz, second vice-president; E. C. Kimbell, secretary; C. B. VerNooy, treasurer.

Finance—William Schlake, chairman; H. J. Flood, Joseph Hock, S. T. Jacobs, Thomas C. Moulding.

Entertainment—L. D. Binyon, chairman; C. L. Rorick, C. H. Alsip, W. P. Varney, E. Cormack, Hottinger.

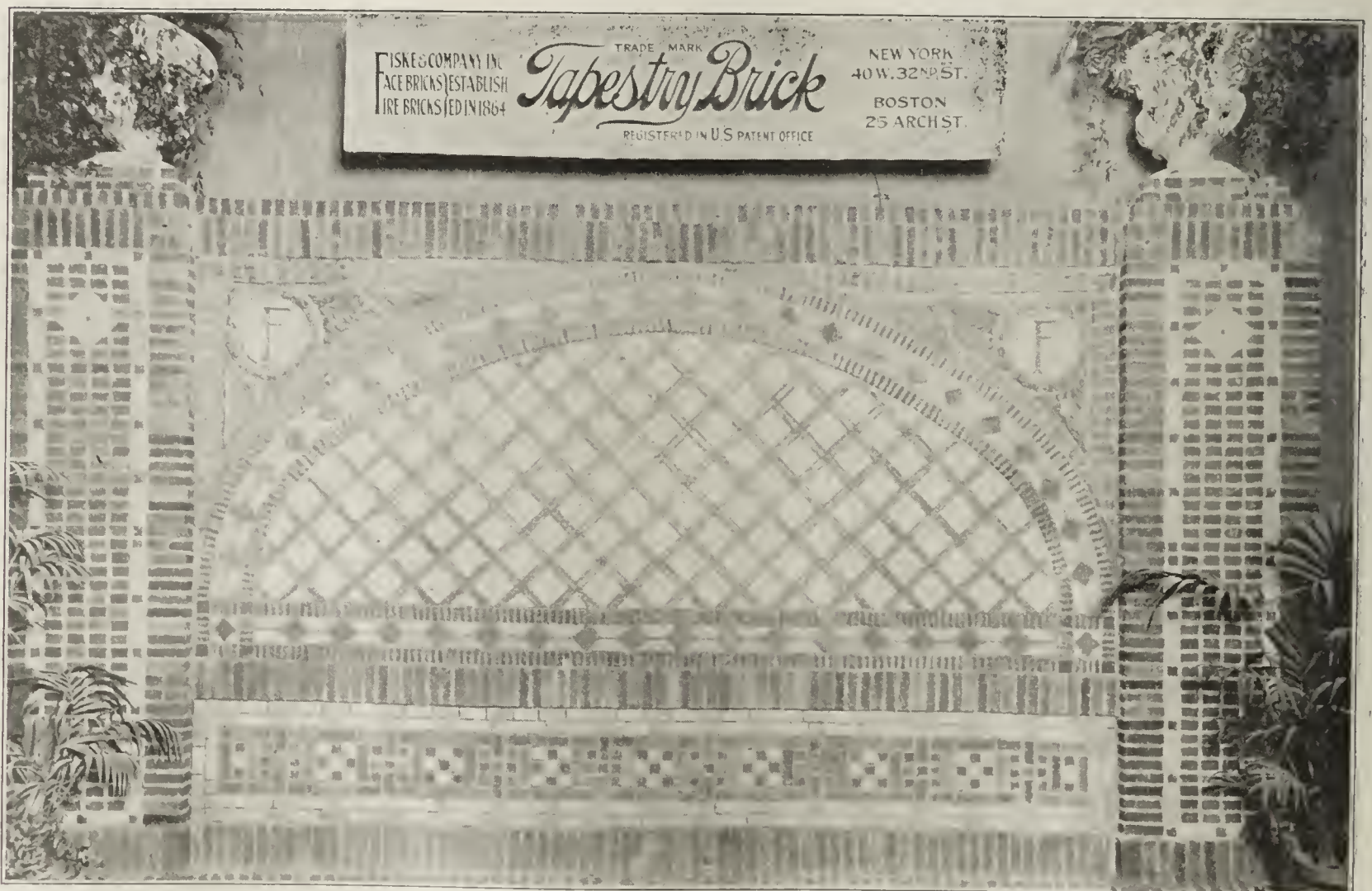


Joint Exhibit of the Pearl Clay Products Co., Tuna Valley Pressed Brick Co., Kittanning Clay Products Co. and Upper Kittanning Brick Co.

THESE TWO EXHIBITS WERE AT THE 1912 SHOW



Display of the W. S. Dickey Clay Co. at the 1912 Show.



Portion of the Display of the Fiske Co., New York and Boston—Replica of a Panel in the New York Terminal Station, Made of Tapestry Brick.

ASSOCIATIONS MEET DURING CLAY SHOW

N. B. M. A. and Other Organizations Give Exposition Their Support by Holding Conventions in Chicago Again Despite Long Established Precedent

With the various national and state associations meeting in Chicago during the Clay Show, there will be such a gathering of clay men here as has never before been witnessed in the industry. As an indication of the patriotic spirit manifested by these organizations, it is stated that practically every regular organized and active body in the Nation will hold sessions in Chicago during the Exposition.

By A STAFF WRITER



ONE of the most important features of the twelve days' period of the Clay Show is the gathering of the membership of the National Brick Manufacturers' Association and other National and State organizations. Breaking all precedent the parent body of clay manufacturers agreed to meet for the second consecutive time in Chicago. This was done to give support to the Clay Show and shows the organization has the proper spirit.

The other organizations that meet with the N. B. M. A. indicated the same broad-minded, unselfishness when they went on record as favoring Chicago and the Clay Show. Practically all the National organizations and not a few State bodies arranged to hold their sessions here this year. Those State associations that felt it desirable to meet within their own territory took adjournments to Chicago and the membership has been urged to come in a body.

Like the N. B. M. A. and the National Paving Brick Manufacturers' Association, these State organizations will have headquarters at the Congress Hotel.

The associations that will meet in Chicago during the Exposition are:

- National Brick Manufacturers' Association.
- The National Paving Brick Manufacturers' Association.
- The Building Brick Association of America.
- American Face Brick Association.
- Western Paving Brick Association.
- International Clay Products Bureau.
- Northwestern Clay Association.
- Canadian Clay Products' Association.
- Iowa Brick and Tile Association.
- Wisconsin Clay Manufacturers' Association.
- Illinois Clay Manufacturers' Association.
- Ohio Clayworkers' and Tile Association.
- National Clay Machinery Association.

The last session of the N. B. M. A., which was held in Chicago, was one of the liveliest in the history of the organization. Many very important questions came up for discussion and these produced heated arguments. It is significant, however, that with all the turmoil that was manifested, the adjournment found harmony still existing and a general pledge among all participants that whatever difference existed would be left behind in the convention hall, and that all feelings of a personal character would be cast aside.

One of the most enthusiastic sessions of the Convention

was that on Friday, March 8, when the matter of the selection of a location for the next convention was brought up. Atlantic City had many supporters, but in view of the work done by Chicago in connection with the Clay Products Exposition, and because of the general belief that the continuation of this show would be of great benefit

to the trade, and because the next show could best be put on again in Chicago, it was unanimously voted by the convention that the next convention of the N. B. M. A. should be held in this city, and the executive committee was requested to arrange accordingly.

While the conventions and gatherings from a social point of view proved most enjoyable, and while the many papers and addresses proved to be valuable additions to clay product literature, yet it was generally conceded that the greatest result accomplished was the furthering of the publicity movement which has now taken such strong hold upon the clay industry.

The program this year will be even more interesting than last year and undoubtedly the question of publicity will receive the attention its importance demands.

The most attractive social feature of the 1912 convention, the banquet, occurred Friday evening in the Gold Room of the Annex, which was decorated for the occasion with the National colors, red, white and blue. A magnificent spectacle was presented when the 600 guests, richly attired in evening dress, were seated around the handsomely decorated tables.

The banquet this year, of course, will be one of the crowning events of the four days' session of the convention.

There was an attendance of fully 1,500 members of the N. B. M. A. and other organizations and affiliated interests at the 1912 session, but Secretary Randall, of the N. B. M. A., and the secretaries of the other associations are expecting even a greater attendance this year, as many doubted the success of the Clay Show in the initial effort of the movement and remained at home last year. This doubt no longer exists, however, and there should be the greatest gathering in the history of the organization.

There has been considerable conjecture over the future of the Brick Builders' Association of America, the avowed intention of Secretary Fiske to retire in favor of some paid official, probably being the basis for bearish stories. Interviews with, and letters from prominent members in



C. A. Bloomfield, Pres., N. B. M. A.

the association, give no evidence of a desire to withdraw from the field. As a matter of fact the B. B. A. membership is more enthusiastic than ever, and, while there is a likelihood of the association undergoing a decided reorganization along broader and more aggressive lines, the stories circulated about its early dissolution are unfounded.

It is apparent that petty politics have been at play again and that the bearish stories circulated were inspired by a desire to further these selfish motives.

The National Paving Brick Manufacturers' Association will come to Chicago with one of the most successful years in its life behind it. Secretary Blair and his worthy assistant, Mr. MacDonald, have been most active participants in the various road congresses and municipal, county and state meetings during the year, and will have a most optimistic report to make to the members during the convention.

With all the other associations in session here during the Clay Show and each one planning to do its share in the coming year's work, Clay Products will receive the greatest boost in 1913 any one industry has ever before received. Many members of the various associations are planning to bring their wives and daughters and they will be well entertained.



T. A. Randall, Sec., N. B. M. A.

The American Institute of Architects has re-elected Walter Cook of Newport, L. I., president.

The American Society of Agricultural Engineers held its annual session in Chicago, Dec. 26-28, 1912.

Purdue University, of Lafayette, Ind., is holding a conference of county surveyors, city engineers, county commissioners and other public officials, the session opening January 6 and continuing until and including January 18. Highway construction and bridges take up most of the time of the conference.

A programme consisting of twenty-six papers was carried out at the meeting of Section D, American Association for the Advancement of Science, which met at Cleveland, January 3. Bridges, repairs, brick, bituminous, small stone block, patented, Topeka bituminous, bituminous gravel pavements, organization, traffic census, road surveying, analysis of materials, handling of materials, methods of testing, maintenance and construction, were some of the subjects treated by state highway commissioners, professors, city engineers, engineers of paving and material companies, chemists, and others who are experts in the field. The National Brick Manufacturers' Association had representation on the program and brick streets came in for their share of publicity.



ACTIVE CAMPAIGN PLANNED BY FACE BRICK MEN



ARRANGEMENTS have been made for a meeting of the Board of Directors of the American Face Brick Manufacturers' Association to meet in Pittsburgh at Ft. Pitt Hotel January 17, when important changes in the constitution and by-laws will be discussed. The American Face Brick Manufacturers' Association was formed a year ago with J. M. Adams, of the Ironclay Brick Co., of Columbus, Ohio as president. A part of the executive committee met with Mr. Adams in Columbus recently when the question of changes was discussed.

As the association was formed for the purpose of securing equalization in the freight rates on face brick, that matter will be the principal topic of discussion at the Pittsburgh meeting. It is proposed to raise a sum of \$20,000 to carry on the campaign and to employ a freight expert who will have charge of the matter before the Interstate Commerce Commission. In order to bring about that movement it is suggested that a large increase in the initiation fees of the association be made.

Manufacturers of face brick have bucked the question of arbitrary rates on many railroads for years. They have been helpless in the matter and as a consequence have suffered to a large degree. Their campaign will be waged against the arbitrary rate matter as well as against the many alleged inequalities of rates over the country at large.

The annual meeting of the Ohio Face Brick Manufacturers' Association will be held in Columbus about the

middle of January. A number of important questions are to come up. Officers for the coming year will be elected.

In casting up the totals for the year 1912, manufacturers of face brick in Ohio are found to have had a fairly prosperous year. Prices have had a tendency to rise and the demand has increased, with the net result that yards are pretty well cleaned up for this season of the year.

The prospects for 1913 are extremely bright. There is a good demand for the better class of face brick in every section and unless something unforeseen happens, the year will be as prosperous if not more so than the past year. Face brick are becoming more popular every year in the erection of public buildings, churches and private dwellings and the demand is spreading to territories where it was believed that freight rates would keep brick out. Taking it all in all the year which has closed was one of the best in the history of the face brick business in Ohio and the prospects for 1913 are bright in every way.

J. M. Adams, secretary and general manager of the Ironclay Brick Co., of Columbus, which has offices in the Ruggery Bldg., speaking of the face brick situation in Ohio said: "The year 1912 was the best year Ohio companies have ever had. The yards are better cleaned up than ever before and the tendency of prices for the coming year is upward. Manufacturers are realizing that on account of the increased wages and the increased cost of factory materials that they must make an advance in price of brick to succeed. The advance on face brick ranges from \$1 to \$2 per thousand."

LAUNCHES STATE-WIDE UNIT-SYSTEM

Illinois Clay Manufacturers Association Sets Example for Other Organizations at Thirty-fifth Annual Convention

One of the most important sessions of the Illinois Clay Manufacturers' Association was held at Champaign, Ill., Jan. 9-11. The attendance was small but the handful present was enthusiastic over the coming year's prospect and planned to take an active part in the movement to place clay products where they belong.

By A STAFF WRITER



THE launching of the unit system to revive interest in the Illinois Clay Manufacturers' Association and to promote a statewide publicity campaign marked the closing session of the thirty-fifth annual meeting of that organization at Champaign, Ill., January 9-11. With this step Illinois sets an example for every state in the Union and furnishes the nucleus for a movement that, in all probability, will become national and from which will result a great publicity campaign covering the entire country.

The initiative work of these units was begun within an hour after the close of the convention and a campaign was started to arrange for an exhibit at the Clay Show next month that will be a credit to the state as well as to the entire Clay industry.

The state was divided into nineteen units and over each unit was appointed a district manager. The names of these managers, together with the counties in their unit, are as follows:

UNIT No. 1—C. B. Vernooy, of the Illinois Brick Company, Chamber of Commerce Building, Chicago, manager. District takes in Cook County, only.

UNIT No. 2—V. S. Curtiss, of the Curtiss Brick Company, Chamber of Commerce Building, Chicago, manager. The district is composed of Will and Kankakee counties.

UNIT No. 3—D. C. Haeger, of the Haeger Brick & Tile Company, Aurora, Ill., manager. The district is composed of DuPage, Kane, DeKalb, Lee, Whiteside, Ogle, Jo Daviess, Stephenson, Winnebago, Boone, McHenry, Lake and Carroll counties.

UNIT No. 4—Charles S. Reed, of the Chicago Re-tort & Fire Brick Company, Commercial National Bank Building, Chicago, manager. The district is composed of La Salle, Bureau, Putnam, Stark, Marshall, Kendall and Grundy counties.

UNIT No. 5—Albert E. Giles, 305 Frye Street, Peoria, Ill., manager. The district is composed of Peoria and Tazewell counties.

UNIT No. 6—Fred Titterington, of the Argillo Works, Rock Island, Ill., manager. The district is composed of Rock Island, Henry and Mercer counties.

UNIT No. 7—A. W. Gates, of the Monmouth Mining & Manufacturing Company, of Monmouth, Ill., man-

ager. The district is composed of Henderson, Warren and Hancock counties.

UNIT No. 8—J. L. Scott, of the Macomb Sewer Pipe Company, of Macomb, Ill., manager. The district is composed of McDonough, Schuyler and Brown counties.

UNIT No. 9—Mr. Dunlap, of the Dunlap Manufacturing Company, of Bloomington, Ill., manager. The district is composed of Woodford, Livingston, McLean, Logan and Dewitt counties.

UNIT No. 10—Mr. Matteson, of the Purington Paving Brick Company, of Galesburg, Ill., manager. The district is composed of Knox, Fulton, Mason, Case and Menard counties.

UNIT No. 11—Louis A. Lambert, of the Beaverville Brick & Tile Company, of Beaverville, Ill., manager. The district is composed of Iroquois and Ford counties.

UNIT No. 12—Douglas Stevens, of the Acme Brick Company, of Danville, Ill., and Cayuga, Ind., manager. The district is composed of Vermillion, Champaign, Douglas, Edgar, Coles, Clark and Cumberland counties.

UNIT No. 13—The Springfield Paving Brick Company, of Springfield, Ill., manager. The district is composed of Morgan, Sangamon, Macon, Piatt, Moultrie, Christian and Shelby counties.

UNIT No. 14—John T. Hummert, of the Gem City Press Brick Company, of Quincy, Ill., manager. The district is composed of Adams and Pike counties.

UNIT No. 15—Warren Ittner, of the Anthony Ittner Brick Company, 502 Odd Fellows' Building, St. Louis, Mo., manager. The district is composed of St. Clair, Monroe, Clinton, Washington, Perry and Randolph counties.

UNIT No. 16—B. H. Richards, Jr., of the Richards Brick Company, of Edwardsville, Ill., manager. The district is composed of Madison, Bond, Montgomery, Macoupin, Green, Jersey and Calhoun counties.

UNIT No. 17—James Hill, of the Murphysboro Paving Brick Company, of Murphysboro, Ill., manager. The district is composed of Jackson, Williamson, Saline, Gallatin, Union, Johnson Pope, Hardin, Alexander, Pulaski and Massac counties.

UNIT No. 18—W. A. Stansfields, of the Mt. Carmel Vitri-fied Brick & Sewer Tile Company, of Mt. Carmel, Ill., manager. The district is composed of Wabash, Edwards, Lawrence, Richland, Clay, Fayette, Effingham, Jasper and Crawford counties.

UNIT No. 19—L. L. Emerson, of the First National Bank, Mt. Vernon, Ill., manager. The district is composed of Marion, Jefferson, Franklin, Wayne, Hamilton and White counties.

WHAT ILLINOIS ASSOCIATION DID AT ANNUAL SESSION.

ELECTED OFFICERS.—J. M. Mamer, president; Fred Titterington, vice president; George J. Walter, treasurer, and A. E. Huckins, secretary.

CREATED UNIT SYSTEM—Revived interest in association work by making the state into nineteen districts, placing a manager over each unit.

PLEGGED CLAY SHOW SUPPORT.—Convention decided to try to arrange an exhibit at the Second Annual Clay Show and began an aggressive campaign among members.

GAVE SUPPORT TO CERAMIC SCHOOL.—Resolutions were adopted asking legislative appropriation for the Ceramic Department of the State University.

The idea of the unit system is to bring the clay manufacturers of the state closer together. The State association, being composed of so many members and covering such a wide territory, proves rather an unwieldy organization.

It is proposed that the several units shall hold meetings oftener than the State association—once a month in some cases, and at least every three months in all cases. These meetings will bring the various members within the respective zones in closer touch with each other and will enable them to discuss matters that may come before them.

The unit system, too, is more likely to keep alive the spirit of co-operation. State organizations do a great good, but because of the infrequent sessions fail to keep up the interest.

According to the plan outlined at the Champaign meeting, the several district managers will make regular reports to State Secretary A. E. Huckins, whose headquarters are at Champaign, and will act with and under his direction.

Paper Develops Movement.

The unit system grew out of the discussion of a paper on local publicity work among clay manufacturers read by Editor Wells of "Brick and Clay Record" on the second day's session of the convention. In this paper it was suggested that wherever there were two or more manufacturers located in a community they should form a local association or club, affiliating, of course, with the State organization.

With a club such as this formed, the members could meet frequently and discuss local conditions, establish a fund for advertising in the home papers and seek to create a local demand for clay products by a consistent campaign.

The paper brought forth a spirited discussion and was renewed the following day when action was taken as stated above, D. C. Haeger, of the Haeger Brick & Tile Co., of Aurora, Ill., fathering the resolution that started the movement.

Following the adoption of this resolution the question of the association having an exhibit as a body at the Second Annual Clay Show in Chicago next month, came up and was discussed for nearly two hours. Many of those present, while feeling that an exhibit creditable to the state should be made, inasmuch as the exposition was to be held in the state and the incubation of the original idea for a show was at a meeting of the State Association, felt the time was too short to prepare one and were inclined not to try to take an advantage of the invitation.

Others, however, thought the opportunity to boost the clay products of the state was too good to be ignored and urged that extra efforts be made to gather together enough material and obtain the consent of enough members to make a display.

Units Get First Chance to Work.

The decision made to attempt to arrange for an exhibit called forth suggestions for a plan by which prompt action could be had. Someone suggested that the new district societies be given their first chance to show their value and within an hour after the close of the convention Secretary Huckins was engaged in making out his list and forwarding an appeal to the district managers to start the ball rolling.

Instructions were given each manager to get in touch with every member of the State association in his zone

and obtain an expression on the exhibit. It is proposed to get at least fifty members to agree to contribute \$20 each towards defraying the expense of the exhibit. If this number is secured two booths will be engaged at the Clay Show and the individual members will display their wares in a uniform manner. Should the consent of more than fifty members be obtained, larger display space will be engaged.

In addition to the State exhibit, if one is made, the Ceramic Department of the State University, which is making an effort to get up an exhibit of the work of the school, and several of the larger manufacturers of the State who contemplate making individual displays, will be asked to arrange to have their booths in the same section with the State exhibit. A huge banner proclaiming to the visitors that each exhibit underneath it is "The Illinois Clay Manufacturers' Exhibit," will be stretched across the top of all the booths. Over each booth of the several exhibitors a sub-banner will be stretched, identifying the displays.

If the plans of the State association are worked out the Illinois exhibit will be one of the most creditable ones at the Clay Show.

Convention Has Small Attendance.

The State Convention was held in the auditorium of the Elks' Building, the headquarters being at the Hotel Beardsley. The opening session was held Thursday morning. The attendance all through the meeting was light, contrary to the expectations of Secretary Huckins, who had worked faithfully to secure a heavy registration.

President F. W. Butterworth was unable to be present, owing to unexpected developments at his plant in Danville. Secretary Huckins, however, was equal to the occasion, and not only acted as chairman during the convention, but filled his position of secretary and did the honors as chairman of the entertainment committee, chairman of the reception committee, played host at the banquet and still found time to attend to a few minor details that insisted on intruding themselves during the three-days' session. In the absence of President Butterworth, J. W. Stipes made the address of welcome.

Several very interesting papers were read during the convention and lively discussion was given each. Space for only a limited number of these can be given in this issue of "Brick and Clay Record," and these will be found in another section. Other papers, however, will be printed in subsequent issues.

One of the most interesting papers read was that of Prof. S. W. Parr, of the Engineering Department of the State University. It was on the characteristics of Illinois coal and their bearing on the purchase price. Prof. R. T. Stull, of the Ceramic Department of the State University, read an able paper on the methods of making rough faced brick in colors, and still another instructor in the same department, Prof. R. K. Hursh, discussed the behavior of clays in burning. Both of these papers were listened to with deep attention and brought forth considerable discussion. Another technical paper by F. W. DeWolff, director of the State Geological Survey, on the testing of shale and clay from the Illinois coal mines, proved very interesting.

Other papers read were:

"A Few Pointers on How to Make a Success of the Brick Business," by John T. Hummert, of the Gem City Press Brick Co., Quincy, Ill.

"Heat Losses in Kilns and Furnaces," by R. K. Hursh, of Urbana, Ill.

"Burning of Paving Brick," by B. S. Radcliffe, of Urbana, Ill.

"Practical Cost Systems," by D. C. Haeger, of the Haeger Brick & Tile Co., Aurora, Ill.

"Progress of the Ceramics Department of the University of Illinois," by R. T. Stull.

"The Illinois Cooperative Mining Investigation," S. O. Andros, of the Department of Mining Engineering, University of Illinois.

"Creating a Demand," by Iverson C. Wells, managing editor of "Brick and Clay Record."

"Drainage Congress and its Accomplishments," by Frank B. Knight, of Chicago.

"Brick for the Hard Roads Movement," by W. T. Blackburn, C. E., Paris, Ill.

"Face Brick and Their Manufacture," by Douglas Stevens, Acme Brick Co., Cayuga, Ind.

Give Banquet Friday Evening.

A banquet was given the visiting members Friday evening in the banquet hall of the Hotel Beardsley. J. W. Robb presided as toastmaster. Those that responded to toasts were:

"The Inner Man," by Rev. Mr. Adams, of Champaign.

"The Optimistic Side of Life," by Charles Neunan, of Champaign.

"Progress," by J. Randall, of the "Clay Worker."

"Conservation," by F. W. DeWolfe.

Saturday forenoon was given over to the business session. The annual reports of the secretary and treasurer were read and the reports of the committees heard. The resolution committee read a resolution urging every effort be made to secure the return of Prof. A. V. Bleining of the United States Bureau of Standards to the Department of Ceramics at the State University, from which he left a few months ago to take the government position. This was adopted by a unanimous vote. Another resolution pledging the support of the association in the effort to obtain a special legislative appropriation for the Department of Ceramics was read and adopted.

The election of officers resulted in the choice of J.

S. Mamer, the retiring treasurer, for president to succeed F. W. Butterworth, of Danville. Mr. Mamer is one of the owners of the Campus Brick & Tile Works of Campus, Ill., and is a very enthusiastic association worker. Fred Titterington, of the Argillo Works of Rock Island, was made vice-president, and George J. Walter, of Chatwick, treasurer. Secretary Huckins, of Champaign, succeeded himself, the convention deciding that his past services, fidelity and enthusiasm merited the honor.

The convention took an adjournment to March 4 at Chicago, which is Illinois Day at the Clay Show. Special headquarters will be opened at the Congress. A banquet will be given on the evening of Illinois Day.

WISCONSIN PLANS BIG CONVENTION.

Programme Covers Variety of Subjects, Chief of Which Is the "Get-Together" Movement, and Clay Show.

The Wisconsin Clay Manufacturers' Association will hold its annual convention at Milwaukee Jan. 29-31 and several most important subjects are on the programme to be discussed. The "Get-Together" movement and publicity for the clay manufacturer have prominent places on the programme and will be discussed on two days during the sessions.

The proposition to arrange a state exhibit for the Second Annual Clay Products Show, also is to be discussed, and final plans will be made.

The entire programme as arranged follows:

Wednesday Morning, Jan. 29.

Registration of members.

Renewing and forming acquaintances.

Wednesday Afternoon, Jan. 29, 2:00 o'clock.

Convention called to order.

President's Address. John Ringle.

Report of the Secretary.

Report of the Treasurer.

Reports of Standing Committees.

Liability and Fire Insurance.

Legislation and Education.

Publicity.

Railway Rates.

"A Year of Brick Business Under the Reduced Rates."

J. G. Hamilton, Grand Rapids.



Ceramic Building at University of Illinois, Urbana, Ill.

Geo. E. Burnham, Milwaukee.

A. W. Hilker, Racine.

"The Proposed Exhibit of the Wisconsin Association at the Clay Products Exposition," by Iverson C. Wells, Managing Editor, "Brick and Clay Record."

This subject will be informally discussed by the members and voted upon.

Thursday Morning, Jan. 30, 8:30 o'clock.

"Tile Drainage Conditions and Requirements in Wisconsin," by Prof. E. R. Jones, Madison, Wis.

Discussion—S. Gunther, A. O. Wachter.

"Present Conditions of Tile Manufacture in Wisconsin," by Oscar Zimbal, Sheboygan, Wis.

Discussion by E. T. Crabtree and John Roffers.

"Some Facts Connected with Drying," by Prof. A. B. Bleininger, Pittsburgh, Pa.

Discussion by J. D. Pratt, Wm. Fricke, W. J. Craney.

Thursday Afternoon, Jan. 30, 2:00 o'clock.

"The Effect of Time on Burning," by Prof. A. V. Bleininger.

Discussion by L. H. Cordes, J. B. Theriault and Ed Fricke.

"Clay Manufacturers' Reciprocal Fire Insurance," by T. A. Randall, Indianapolis, Ind.

Discussion by F. L. Sanborn, L. T. Crabtree and J. P. McLean.

"Workmen's Compensation Insurance," by Wm. A. Fricke, Wausau, Wis.

Discussion by A. O. Wachter, Oscar Zimbal and H. J. Votaw.

Friday Morning, Jan. 31, 9:30 o'clock.

Reports of Special Committees.

Election of Officers.

"Should the Clay Manufacturer Advertise His Product?" by I. J. Covey, Minneapolis, Minn.

Discussion.

The headquarters of the convention will be at the Republican House. The present officers of the Association are: John Ringle, of Wausau, president; Oscar Zimball of Sheboygan, vice president; Samuel Weidman of Madison, Wis., secretary; E. H. Korrer of Fond Du Lac, treasurer.

IOWA PROPOSES BIG PUBLICITY MOVEMENT.

State Convention to be Held Jan. 22nd and 23rd at Des Moines Has as Keynote the "Get-Together Spirit."

The annual convention of the Iowa Brick and Tile Association will be held January 22-23 at Des Moines, and promises to have the largest attendance in the history of the organization.

The sessions will be held in the assembly hall of the Coliseum and ample room for display of manufactured products by members of the association has been provided for. The headquarters of the convention will be the Hotel Randolph.

Secretary C. B. Platt has made an extra effort to secure the attendance of every member of the association and has received unusual encouragement.

The keynote of the convention is the "Get-Together Spirit," and Secretary Platt promises to launch a general publicity and association movement that will place the Iowa Association in the front ranks of aggressive organizations.

The convention opens Wednesday morning at 10 o'clock. The forenoon will be devoted to the hearing of committee reports and other routine work. In the afternoon at 2 o'clock, the regular business session will be opened. In the evening, meetings of the different branches of the association will be held.

Thursday at 10 o'clock the reading of papers and their discussion will be the order of the day. In the afternoon, several excellent addresses will be given and one of the prominent features will be the discussion of the "Get-Together" movement so earnestly urged by "Brick and Clay Record."

PLANS OF NORTHWESTERN ASSOCIATION.

Preliminary Meeting Held—Date to be Announced in Near Future.—Clay Show Plans to be Discussed.

The annual meeting of the Northwestern Clay Association is soon to be held, the day and date to be settled very soon. A meeting has been called of the executive committee in Minneapolis, at which matters preliminary to calling the meeting will be considered, and the annual meeting will be called as early as possible. Axel Anderson, the secretary, anticipates that the annual meeting will be held toward the last of January or possibly the first week in February, the latter being more probable. The association has a number of matters to consider, including some action toward securing a revision of freight rates in Minnesota on brick and clay wares. A committee was appointed a year ago on this subject, following the outcome of the good work in Wisconsin by the state association there, and it is thought that as good work can be done in Minnesota and possibly somewhat quicker, through the effect of work done in Wisconsin. Should the committee, which has the matter in charge, be able to make any report of progress, there is no doubt that a very aggressive campaign will be immediately inaugurated. Another matter which will come up will be the question of making a display at the forthcoming clay show in Chicago. A year ago the Northwestern Clay Association made a display, taking one of the smaller booths. At the coming meeting there will be a discussion as to the value of the display to the members and whether it is regarded as desirable to renew the display at the coming show. The larger concerns represented in the Northwest, it is very probable, will have individual displays at Chicago again as they did last year, but the entire question will be up for consideration and discussion.

CANADIAN CONVENTION DRAWS BIG CROWD.

Annual Session of Clay Manufacturers is Being Held This Week at Toronto and is Well Attended.

The annual convention of the Canadian Clay Manufacturers Association is being held at Toronto this week, the opening session being Tuesday, Jan. 14. Early reports indicate that a large membership registered and that a most profitable meeting was to be held.

A considerable delegation from the United States left early in the week to be present and the American machinery manufacturers attended in full force.

An instructive programme was arranged and there were several special subjects to be discussed.

MANTEL AND TILE DEALERS TO MEET.

This Aggressive Little Association Holds Annual Convention at Detroit February 11 to 13, Inclusive.

Detroit has been selected as the meeting place for the annual convention of the Interstate Mantel and Tile Dealers Association which will be held February 11 to 13, inclusive, headquarters to be at the Hotel Pontchartrain.

A very interesting programme has been arranged and a series of entertainments for visiting members planned. It is highly probable the association will take an adjournment to Chicago some time in March during the Second Annual Clay Show.

A PROGRESSIVE FIRE BRICK PLANT

Paving Brick, Radial Block and Face Brick Produced in Large Quantities by
Clymer Brick & Fire Clay Co., at Indiana, Pa.

By A STAFF WRITER



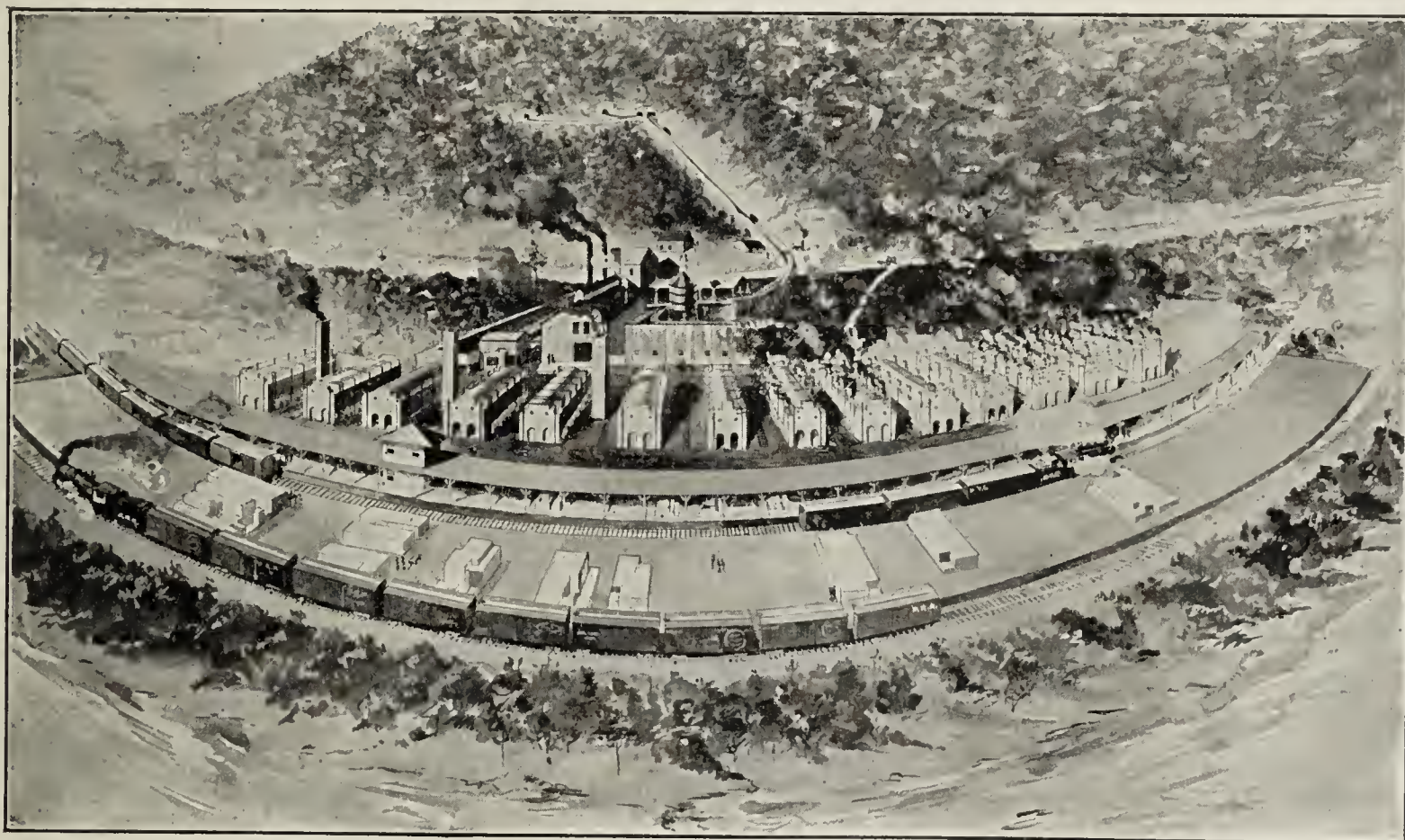
HERE is no denying the fact that the Clymer Brick & Fire Clay Co., of Indiana, Pa., is fast forging to the front in the fire brick world, the kilns at its plant now having an output of about one million brick per burning, and in order to keep up with its great volume of business, the company has found it necessary to work three shifts of workmen during a large part of the past year.

Due to the thorough organization of its selling force, the radial brick manufactured by this company are found in many large chimneys and stacks in almost every state in the union. The Clymer paving brick, made by this company, have an equally large demand, and their sale is exceptionally strong in the eastern territory. While the

1907, and its stockholders are to be found among the residents of Indiana, Clearfield and Philadelphia, Pa. The plant was located at Clymer on account of the unlimited acreage of clay in that vicinity and the fact that fuel is also obtainable at a reasonable cost in the vicinity of Clymer.

The company secures its coal and clay from the same mine, the mine being about 150 feet in depth. The mines being located at a greater height than the plant, the gravity system is employed in conveying the clay and coal to the plant.

The arrangement of the plant is of the most approved plan, the original plans calling for the erection of a plant that would give a large production with the least amount



Showing Excellent Arrangement of the Clymer Brick & Fire Clay Co.'s Plant at Indiana, Pa.

general offices of the company are located at Indiana, Pa., the plant of the concern is located at Clymer, Pa., some distance away, but still convenient to the general offices at Indiana.

Soon after the company began operating the plant, believing it to be to its advantage as well as to its workmen, the concern erected neat brick dwelling houses for the use of its workmen, and all that have been built are now occupied. It was found in the construction of these houses, that the use of brick was less expensive than lumber.

Coal Company Erects Brick Workmen's Cottages.

So favorably impressed was the Russell Coal Co., nearby, with these homes, that forty brick cottages for the coal company's employes were ordered built, from Clymer brick.

The Clymer Fire Brick Company was organized in

of labor, and this idea was carried out in detail in every department.

The material used is a plastic fire clay. The plant, at present, has a capacity of something in excess of 50,000 brick per day. Paving brick form a large part of the business of this concern, although the demand for high grade face brick, in both buff and gray colors and for their fancy interior decoration brick and radial perforated chimney brick, is exceedingly heavy.

The kilns in use at the Clymer plant are of the most modern type and comprise both the rectangular and down draft types. While a good sized stock is kept on the yard, the bulk of the product is shipped directly from the kilns.

The officers of the Clymer Company are: President, Hon. John S. Fisher; vice-president, Henry Hall; secretary and general manager, George W. Lenkerd; treasurer,

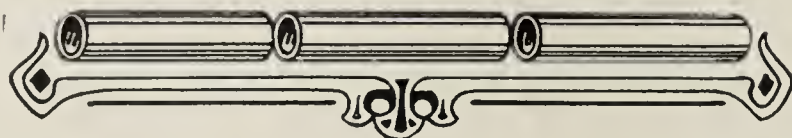
R. M. Wilson, cashier of the Savings & Trust Co., of Indiana, Pa.

The board of directors include the above officers and H. C. Christy, of Indiana; R. A. Shillingford, T. L. Snyder, and H. E. Kratzer, of Clearfield, Pa., and H. N. Widdowson, of Mahaffey, Pa.

Recently the company filled an order for radial brick, to be used in the erection of a 366-foot chimney for the Eastman Kodak Co., of Rochester, N. Y., which is said to be the tallest stack east of the Rocky Mountains. Other tall stacks built of the rectangular perforated brick of

this company are the twin chimneys of the Capital Traction Co., of Washington, D. C., and that of the Pennsylvania Coal & Coke Co., at Cresson, Pa. Streets in Washington, D. C.; Baltimore, Md.; New York City; Albany, N. Y.; Boston, Mass., and many other cities are paved with Clymer vitrified paving brick.

Since the plant was placed in operation, five years ago, it has not shut down for a single day, which certainly is a record to be proud of. Present indications point to a continuation of the prosperity this company has enjoyed during the past.



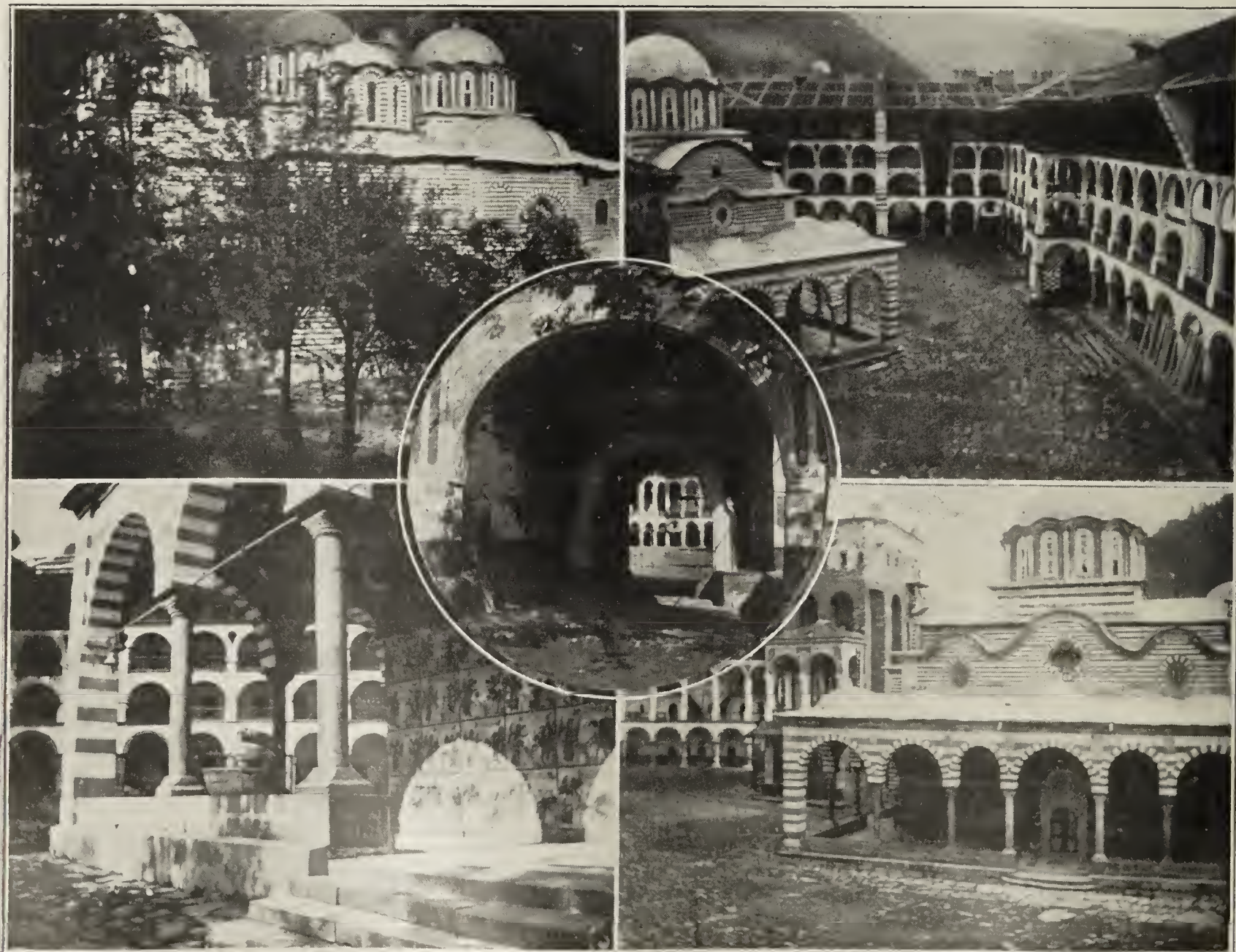
BRICK MONASTERY HOUSES BALKAN WOUNDED



WHILE the world gave its plaudits to the militant Bulgarian infantry, and read, with a keen satisfaction, that the Turks were being bested and mowed down in thousands before the armies of the Balkan League in southeastern Europe, a company of gray-bearded Greek Christian monks, aided by the women and children of the neighboring Bulgarian villages, were tending the suffering and dying from the battle fields of Macedonia, who had

been transported beneath the shelter of the Red Cross to the court-yard of the Rila Monastery, in southern-most Bulgaria. This monastery named for St. John of Rila, the patron Saint, is one of the most wonderful examples of brick construction of the world.

For size alone, it is remarkable, considering the location. For, to reach Rila, even now, one must engage a drosky and travel two days southward, over miserable up-land roads from Radomir, the nearest point on the



Rila Monastery In Bulgaria Where Wounded Balkan Soldiers Were Housed—Wonderful Example of Brick Work.

railway. Toward the end of the journey the mountains rise stupendously high and the paths are narrow and difficult. Up these mere trails the bricklayers were forced to haul their supplies, their mortar, and their utensils. Even a horse gives out on this path and requires a rest, frequently. In addition to the difficulties, at that time, Turks and Christians were most unfriendly, and bands of Arnauts had a habit of swooping down from some forest-glen, murdering the masons or the caravanseers and destroying their goods, if but for the glorification of Islam.

To one coming to Rila Monastery today, its beauty is most striking. As one emerges from the forests that cover the monastery lands one is greeted by the sight of a three-story structure, its brick work and its stone-work coated over with adobe, as is the Balkan fashion, and this further covered with white-wash to harmonize with the terra-cotta roof. A little draw-bridge terminates at a gate in the heavy building or wall, and as one rides through the passage into the quadrangle, words fail to express the delight and wonder aroused by the beauty of

the scene. The buildings tower up, four stories high, with weathered balconies of timber thrown in relief against the walls. Out in the court, there is a church and a heavy watch-tower. Under the guidance of a monk, assigned to personally conduct us, we are taken to the center of this broad, cobbled court again, to the foot of the square tall tower where a little chapel is now seen. From the tower one is taken to the church inside the quadrangle, then through the monastery itself. Here, one finds the most interesting and fascinating building in southern Europe. The uses to which the chambers are put, their decorations, the monks, the books, the storeroom and their contents, make the trip of exceeding interest. To the brickmaker of course, the brickwork appeals strongly. The walls and the supports are all of home-made brick, coated with the native adobe, which is then painted in white and ornamented with pictures and various ornamental designs. Pictures best present the wondrous beauty of the ensemble though unfortunately, the absence of color fails to convey the charm and artistic conception of the work.



ELECTRICITY THE MOTIVE POWER AT LARSON PLANT



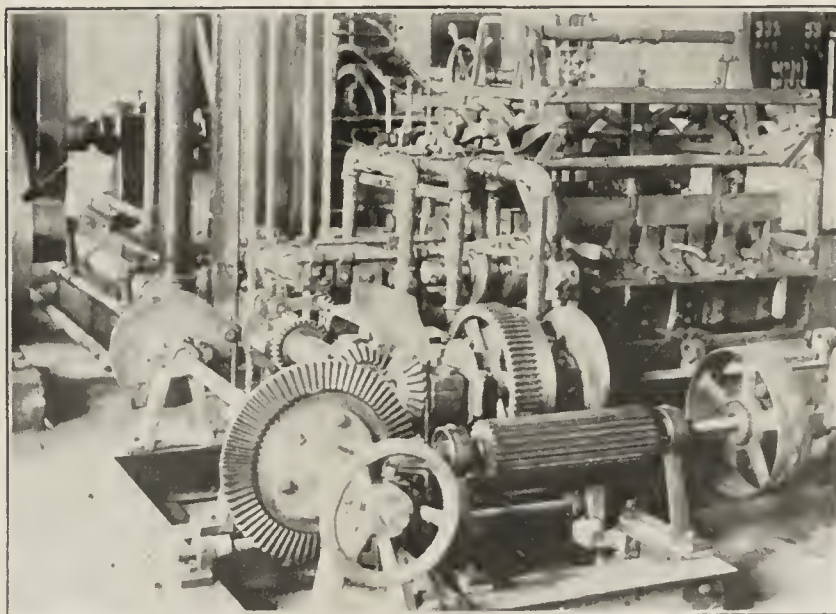
ABOUT twenty years ago there was established at Shawano, Wis., the Larson Brick & Tile Works. Brick were, at first, made on a very small scale, but during the last five or six years Mr. Larson, the proprietor, has made vast improvements in the plant, which more than doubled its capacity. The improvements include the installation of electric power in place of steam. Today, the plant is operating on an extensive scale. It is situated about one-half mile west of the city of Shawano and is served by the C. & N. W. R. R. The plant is located on a tract

The buildings consist of an engine room 28 by 28 feet of solid brick; a two-story machine room, 28 by 32 feet, constructed of corrugated iron with metal roof. The framework, which is constructed of 10 by 10 timbers, makes a very rigid base for the shaftings.



Machine Building and Dry Shed at the Larson Plant.

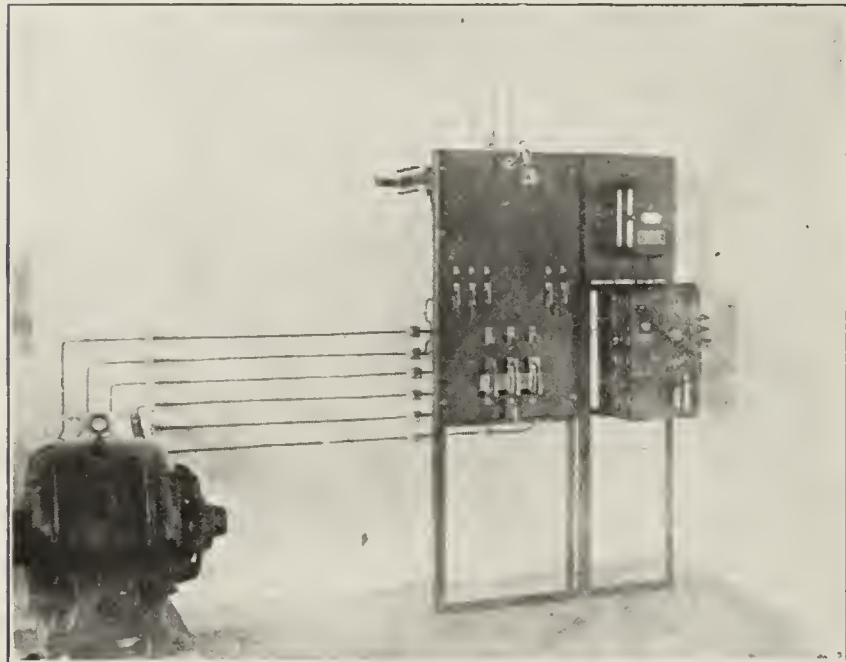
of 21 acres, which is rich with deposits of very fine clay, ranging from sixteen to thirty feet in depth. The top clay is very lean and reddish in color and merges into a blue bottom clay, rich and plastic. The mixture of the top and bottom clays makes a light cream colored brick.



Automatic Brick Cutter and Board Delivery for End-Cut Brick.

The clay is mined by hand and is then hauled to the machine room, a distance of about 500 feet in one and one-half yard steel dump cars made by the Atlas Car & Mfg. Co. The clay is not stored or weathered, but is dumped immediately into the feeder, where it is mixed, tempered with water and then fed into a Bonnot crusher, which is directly over the brick machine. The semi-stiff-mud system is used. Mr. Larson has worked for a great many years in an endeavor to perfect an automatic brick cutting machine. He claims to now have this machine perfected and this is one of the interesting features of his plant. The accompanying illustration will serve to illustrate his invention. It feeds its own pallets, cuts the

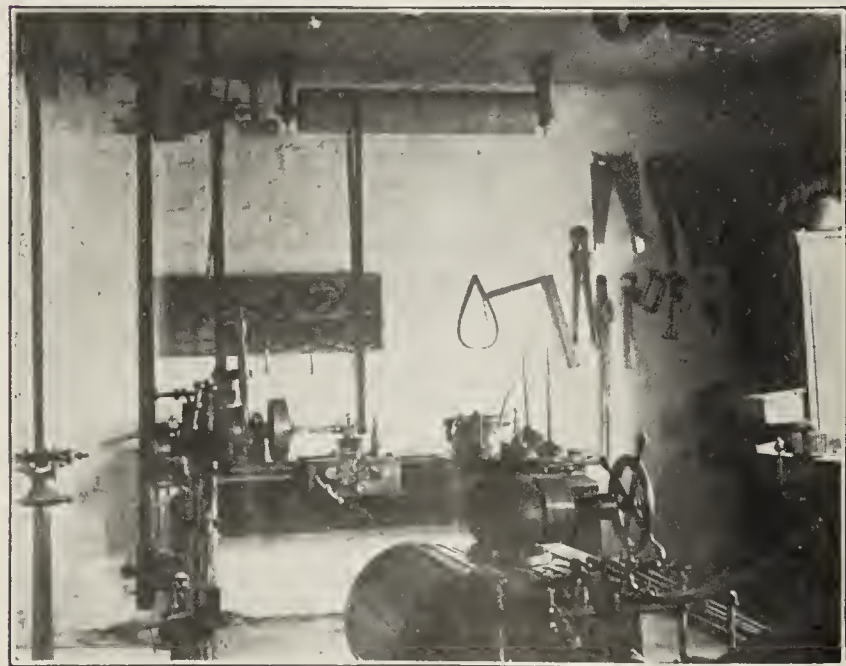
brick, puts them on the pallets and delivers them ready for the cars. Mr. Larson has his own machine shop and this cutter was wholly constructed therein, with the exception of the castings. Mr. Larson works his clay soft and for this reason he deemed it advisable to make this cutter.



Corner of the Machine Shop at Plant of the Larson Brick & Tile Works.

By use of it he claims the clay can be worked much softer than with the ordinary automatic cutter. By this method he claims a much stronger brick is made with one-half the customary power, which is a great saving. Only one man is required in the machine room and he controls the feeder, crusher, brick machine and automatic cutter. He also loads the brick from the machine into the cars.

Only two transfer cars are used, one to the machine and the other to the kilns. The brick are dried by air in sheds, 150 to 200 feet long and 12 feet wide, which were especially constructed according to the plans drawn by Mr. Larson. About one week is required for drying.



Switchboard and 25 h. p. Motor Which Operates the Machinery at the Larson Plant.

Two round and two square up-draft kilns are used, the brick being set eight over nine in the round kilns, 32 brick high. Coal and wood are used for water smoking and burning. Mr. Larson has not done away entirely with his engine, although it has not been used since the installation of electric power. A single 220 volt, alternating current motor is sufficient to operate the entire

plant. Mr. Larson is loud in his praises of the electric drive and he states it is the only logical power to use. He finds it much cheaper than steam and by using this power he pays for just what he uses. He can start and stop the machines as desired and the motor is ready on a minute's notice. The very light cream colored brick manufactured at this plant have stood the efficiency test locally and in other sections of the country. Approximately one-half of the output is disposed of to local trade and the balance is eagerly sought by customers more remote from Shawano. The plant operates during about seven months of the year.

HAD A BUSY YEAR

Stevenson Company of Wellsville Says the Future Looks Equally Good and Big

The Stevenson Co., Wellsville, O., manufacturers of the clay-working machinery, bearing their name so creditably, has had a very busy year of it—so busy that the men and machinery have gotten mighty little breathing and recreating time during the past twelve-month and the future looks equally good and big to the company.

During the year, among others, it furnished new outfits more or less extensive to the Georgia Vitrified Brick Co., Augusta, Ga.; the Buckeye Fire Brick & Clay Co., Scioto Furnace, O.; the Standard Drain Pipe Co., now The Standard Clay Products, Ltd., New Glasgow, N. S.; the Morral Tile Co., Morral, O.; the Consolidated Coal Co., Glamorgan, Va.; the Nanticoke Brick Co., Creasy, Pa.; the Beaver Clay Mfg. Co., New Galilee, Pa.; M. E. Diehl, Bedford, Pa.; the What Cheer Clay Product Co., What Cheer, Iowa; L. R. Mathieu & Sons, Altoona, Pa.; the Athens Pottery Co., Athens, Ga.; the Malvern Fire Clay Co., Malvern, O.; the Meaford Brick Co., Meaford, Ontario; the Citadel Brick & Paving Block Co., Quebec; the Lisbon Lime Co., Lisbon, O.; the Shawmut Paving Brick Co., Shawmut, Pa.; Wm. C. Baxter, contractor, Chappaqua, N. Y.; the Murray Brick Co., Cleveland, O.; the Straitsville Impervious Brick Co., Straitsville, O.; the South Webster Face Brick Co., South Webster, O.; the Acme Brick Co., Edmonton, Alberta; the Stratton Bros., Empire, O.; the Western Maryland Sand & Stone Co., Cumberland, Md.; Steffler & Brown, Darlington, Pa.; the Washington Brick, Lime & Sewer Pipe Co., Spokane, Wash.; and the Robinson Clay Products Co., at Akron, O.

New Sand Lime Machine.

Probably the most important event of the year in the Stevenson output was the development and marketing of a new sand-lime machine—a pan that grinds and mixes at the same time. It not only very largely improves the mix but increases the output. The sand-lime brick manufacturers who have installed it in their plants are enthusiastic over it and declare it to be a great help to them.

Five of these sand-lime mixers have already been sold to one firm and they are planning the purchase of a large additional number in the coming year. Sand-lime brick concerns will do well to investigate these new machines.

Many causes combined to bring about present conditions in the clay industry. It will take the combined efforts of all those interested, to effect a cure-all. Let's go to it.

MAPS OUT SIMPLE COST ACCOUNTING

D. C. Haeger, of the Haeger Brick & Tile Co., Reads Interesting Paper Before the Illinois Clay Manufacturers Association at Champaign

Few manufacturers know what their manufactured ware really costs and never know whether they have made money or lost it until the close of the year, when a peep into the till box tells them.

Mr. Haeger is at the head of three of the most successful plants in Illinois and attributes much of his prosperity to a systematic accounting for all manufactured ware.

It is his boast that not a pipe, tile or brick leaves his plant without him knowing exactly what it cost to produce.

By D. C. HAEGER



FOR many years there have been discussed, at clay conventions, the various problems that are met with in the manufacture of clay products. Those manufacturers who have attended these conventions have received many new ideas about the handling of their clay so that now, most of their manufacturing problems are satisfactorily worked out, and their plants are on a profitable basis.

But conditions have been changing very rapidly during the last ten years in this country, and in many lines of manufacture, profits are growing less each year. In England, profits are so little now that manufacturers are content to even enter into co-operative schemes with their labor, practically letting their labor run the business. There is no question but what the day of large profits is past, and all manufacturers should get closer to the details of their business.

Up to only a few years ago, labor and coal were cheap and the heavy demand, especially for drain tile, kept the few factories hustling to keep up with orders. Prices were good, and the manufacturers were content with their profits, and were not particularly interested in the cost of producing their goods. There is not much skilled labor required in either brick or tile plants, and many factories use the foreign labor that has been coming to this country for many years. However, conditions have improved in their own countries, and foreign immigration is growing less. The native born laborers are educating themselves and learning trades, and soon the manufacturers will have to pay better wages in order to get sufficient labor to operate their factories economically. The price of coal is steadily creeping up, and in many mines, the quality is getting poorer.

Two Ways of Increasing Profits.

There are only two ways to increase the profits of a manufacturing business. One is to decrease the cost of manufacturing, the other, to increase the price that the manufactured article is sold for. With the two great expense accounts for the clay manufacturer, labor and fuel, getting larger each year, it seems quite a problem to decrease the cost of manufacture.

The last few years has seen a cutting of prices, especially in the drain tile business, until now the prices are where they were twenty and thirty years ago, when labor and fuel were exceedingly cheap. It seems as though the clay manufacturer is only figuring on the present, and at the present rate, in a few years, there will be many plants that will not be active. The small plant with few kilns, if it has a good local trade will be able to operate, but the medium sized plant, where the owner has to depend upon a superintendent and other help, will not have sufficient local trade, and it will not be equipped

to make goods cheap enough to ship any great distance. The large plants, especially those making large drain tile, if properly equipped and managed, will be able to undersell the small plants on the small tile, and make their plants pay on the large tile.

Although the farmer is better able now to pay good prices for drain tile, on account of the rapid increase in farm land values, yet the drain tile manufacturer is asleep and is losing his opportunity to get fair profits. The farmer and dealer are fast becoming educated to low prices, and the chance is slim for increasing the profits by increasing the prices. If lower prices sold more drain tile, the manufacturer might be considered a level-headed business man, but the land requires so many tile, whatever the price is, and the drain tile manufacturers will continue in their philanthropic work, until the clay banks are depleted, and many factories closed down, complete losses. Prices made today should allow for a heavy depreciation which will have to be figured on very soon in many localities.

Goods Must Be Produced Cheaper.

The natural result will be that the successful manufacturer will have to know what his goods cost him, for it seems to the writer that the profits can be increased, or even kept where they are, only by producing cheaper, and getting better efficiency from the machinery and better results from labor and fuel. But in order to know whether one is getting better results, some kind of cost records must be kept. Not on sheets of paper, to be filed away and figured over at leisure, but a system should be installed at the factory and office that will dovetail with the bookkeeping system and be kept up-to-date every day. To lump expenses and figure costs at the end of the year, after all the profitable or unprofitable business is completed, seems very unbusinesslike and foolish.

The keeping of brick costs is very simple, but in the manufacture of drain tile, say in sizes from 4-inch to 24-inch, it becomes a much more difficult problem. There should not be too much red-tape required in the cost records, and the manufacturer cannot expect to get absolutely correct results. This would require a number of cost clerks and considerable work, and would not be practical. A great many tile makers figure on the tonnage basis, but they cannot tell just where the dividing line is in the cost of producing small and large tile.

Simple Cost System Described.

In the cost systems, which the writer uses, the manufacturing is divided into six departments: Power, Clay, Machine, Setting, Burning, and Handling, the latter being subdivided into three operations, that of drawing from Kiln to Stock, Kiln to Car, and Stock to Car. The

expense in each department is determined each day, but the general expense such as superintendent, night watch, supplies, etc., is proportioned and added in at the end of the month. Besides, the regular pay-roll book, the superintendent is required to make out a daily labor sheet, giving the name of each laborer, and the time worked in each department. This sheet is figured each day by the clerk in the office, and forms the basis for determining the expense to be charged against the many operations for the different sizes of tile. In the office, a sheet is kept for each size of tile or product made, this being divided into the six departments. The various amounts of tile made, set, burned, or handled are put down each day and the expense figured.

Where motors are in use, the power can be figured daily from the meter and charged against the product made that day. If boilers and engines are in use, it is a simple matter to weigh the coal and get the daily power cost. The factory reports the tons of clay dug each day, and at the end of the month the total expense of the clay department is divided by the total tons dug, and the cost per ton determined. The tons of various products are figured on that basis, and the clay expense for the month is arrived at. The setting is charged to the various sizes according to the number of dryer cars set. All coal used in burning is weighed to the kiln, and a close record kept of fuel used on each burn. A regular kiln report blank is used, showing the goods set, cost of setting, time kiln was fired, watersmoked and finished, labor cost of burning, fuel used, time of cooling, expense of drawing and a check of the No. 1 goods drawn. Attached to this blank, is an accurate time sheet for the setting and also burning labor of the kiln. Where two or more kilns are on fire at once, the burners' time is divided and charged on separate burning tickets daily.

Finding Cost of Handling.

When one starts out to put in cost systems, he finds it comparatively easy until he gets to the handling department. The total expense cannot be lumped and divided by the tons handled, for some of the goods are handled twice, from kiln to stock and then to car, while some are handled direct. A record is kept by wheelbarrows or trucks of products drawn from kilns, and either put into cars or stock, and the expense is proportioned accordingly at the office. The work of getting all of these factory reports is attended to by one man or clerk who puts in about two hours' work a day.

Before the bookkeeper in the office can close the books for the month he must have the cost basis for each product made. At the end of the month, a burning sheet is made out showing each burn complete with labor and fuel cost, proportioned to each size burned according to the tons of different sizes burned. A general sheet or record is made up showing each size with the expense in each department. When this sheet is completed, there will still be some expense, such as machine repairs, etc., that cannot be put down daily, and which will have to be spread over the various departments. The sum total expense of this sheet will equal the manufacturing expense as shown in the regular set of books, but divided separately for each size of tile made, set, burned and handled. Divide each of these departmental expenses by the number of tile either made, set, burned or handled and the cost per thousand is determined.

In the regular set of books, there are two inventory accounts called manufacturing and finished product accounts. The total manufacturing expense each month is charged to the manufacturing account and the finished

goods, figured at the cost basis shown by the cost system, is credited, leaving then the value of the goods in the process of manufacture, and not finished. The amount of the finished goods each month is charged to the finished product account, and the sales, figured at the same cost price, are credited and charged to the sales account, leaving the value of the finished goods on hand. This arrangement gives one a perpetual inventory.

Verifying the Accounts.

By watching the manufacturing account, one can tell if the costs are right, for if this account gets smaller each month than the apparent inventory should be, it is a case of using too high costs. After the system is in use a few months, if the cost of some operation such as the burning of 4-inch tile, runs about the same each month, it stands to reason that the system is practically correct.

Many other practical records can be kept, such as a chart showing the daily production of the plant, and the average for the month and year expressed in tons. Other systems are kept showing the efficiency of kilns, and of the plant based on the percentage of time operated. Many new systems can be devised, all of which will be of great assistance in getting to the details of manufacture, and the reducing of manufacturing costs.

There are many benefits to be derived from studying over these costs. If one wishes to put in a piece work system, the records will give all the information necessary for figuring a fair basis. If the clay is changed or a new mixture used, one soon learns from his costs if it is a profitable change to make. The greatest benefit, however, is that the manufacturer has a complete account of all operations of his plant, and should the costs run higher he is notified by the systems and can take immediate steps to stop any losses. In selling, one knows how far he can go, and should competition be very keen, the cost system determines the most profitable product to make, and the manufacturer can increase his profits by having this knowledge.

There are many changes to come yet, and it behooves the drain tile manufacturers to prepare themselves for cheaper and better production by installing practical but thorough methods for determining their manufacturing costs.

NO ONE MAN KNOWS IT ALL.

Following out the policy of the above axiom has resulted in the successful outcome of many large manufacturing enterprises. A "one man" concern cannot be expected to extend beyond the compass of that man's limited horizon. But take that man's power, knowledge and ability, and make it a 10-power man and you have a force that can work wonders.

Marshall Field, the merchant prince, according to his own words, became many times a millionaire by hiring men who knew more than he did. If he had been of the "know-it-all" type he would probably have spent his life running a country dry-goods store.

The brickmaker who makes a success by applying this principle, secures men of experience for each department, and does not presume to run the establishment on his own limited knowledge and experience. Likewise he employs salesmen who are experts in their line, and allows them to map out their own selling campaign. It is, of course, understood that all departments must work in co-operation with each other, but each one is allowed to introduce his own particular ideas and the man who can think up new schemes is the one who soon forges to the front.

URGES LOCAL ASSOCIATION PUBLICITY

Editor of "Brick and Clay Record" Reads Paper at Illinois Convention Which Inaugurates New Unit System

The following paper was read at the Thirty-fifth Annual Convention of the Illinois Clay Manufacturers' Association, Champaign, Ill., Jan. 9-11, by Mr. Wells, managing editor of this journal. Its subject was "Creating a Demand," and it prompted a discussion that resulted in the inauguration of a unit system in the state which will be the means of giving burned clay a great boost.

By IVERSON C. WELLS



HE selling of any utility—any commodity—depends upon the demand that has been created for it. If there is no demand there can be no sale.

If what you have to sell is worth buying, it is an easy matter to find a customer, but you cannot find him unless you seek him.

That's a fundamental principle in the law of trade, and the manufacturer or any other business man who thinks differently isn't selling anywhere near his capacity.

A man may open up a swallow-tail suit factory on the banks of the River Nile and he may manufacture swallow-tails until he has a stack as high as the pyramids for all the good it will do him. The natives know nothing of swallow-tail coats. They know nothing of social functions and midnight suppers and they know nothing of cotillions and the like.

But suppose this manufacturer had a bull-dog determination to sell his big stack of swallow-tails and he set about to create a demand for them—don't you believe it possible he could have every knock-kneed denizen of the jungle parading about in full dress before many weeks?

Creates Demand for Swallow-Tails.

Let us imagine how he would go about it.

First he would go to the dandy of the village and he would prevail upon him to don a suit. Perhaps he might place a string of beads in his hands as an extra inducement. Or he could go to the big chief of the band and shower him with presents and include among the gifts a swallow-tail.

Imagine then what would happen. Soon it would become noised about among the other dandies of the tribe and there would be a rush for swallow-tails. This is not a far-fetched illustration, because a few years ago in Zululand just such a case occurred and for many years it was no uncommon sight to see a Zulu dandy parading about in a swallow-tail coat, a silk hat and bare shins.

If you have something the people want and you let them know you have it, you can sell it.

The man that made cutlery once was content with making a few razors to supply the barbers of the world. He had learned how to make good razors and was content with making the small number required.

One day, however, a fellow by the name of Gillette began to think about the thousands that patronized the barber daily, and he figured if he could get each one of this vast army to using razors instead of patronizing the barber who only required one razor to shave hundreds, he could make a fortune.

The Safety Razor Popularized.

He put on his thinking cap. The safety razor was the result. He built special machines to make these razors in

larger numbers. He built a great plant to house the machines that made the razors.

And he did not stop there. He started out to sell those razors.

Suppose, however, he had stopped with the perfection of his safety? Suppose he had simply said—as you clayworkers do today—"Well, I've learned how to make a razor that any man can use safely and that's just what he wants. Now, let him buy."

How many safeties would the world be using today?

But Gillette didn't stop. He knew he had something the buying world wanted and he started out to let them know he had it.

How? By publicity—by judiciously advertising the fact. And he kept hammering and pounding away at the great buying public until it dreamed about Gillette razors.

He did his work so well a thousand safety razors are sold today where one of the old-fashioned kind was sold ten years ago.

You clayworkers have the best building material in the world. You have the best drain tile—the best sewer pipe—the best and most durable roofing material in the world and you know it.

But you are practically alone in your knowledge.

What you have got to do—if you expect to sell burned clay, is to get the people to thinking about burned clay every time they think about construction work of any sort.

You must educate the people. It's a big task—one that compares with any portion of your business in its importance, but it's one that must be considered before we can hope to see the era of burned clay an established fact.

Creating Demand for Burned Clay.

Creating a demand—publicity—advertising—call it what you will—is as essential in the burned clay field as it was in the razor industry—in the concrete industry—in the fruit business or any other business.

Two hundred years ago the great daily newspapers and the great popular magazines we have today to spread information were unthought of, but the knickerbockered business men of that period realized the importance of publicity and the village crier with his ding-dong bell was brought into play.

Publicity today is what it was 200 years ago—the science of attracting attention—of making the other fellow think of you when he wants something that you make.

It has become an established creed that no business can survive without judicious publicity. No merchant—however small—would think of trying to conduct a store without the use of printer's ink. No manufacturer in the world, but a clayworker, would figure on the coming year's expense without including an advertising appropriation.

And yet clayworkers actually try to sell their product

by sitting down and waiting for customers to come to them.

The buyer of today doesn't seek you—competition is too keen for that. You must seek the buyer.

Now, we come to the point—if we must seek the buyer, how? Publicity, of course.

Costs money? Certainly. So does a brick machine—so does your fuel—so does your clay—your drying, everything that goes to make the completed product.

That's where the clayworker makes his mistake. He figures advertising as a luxury—instead of a necessity.

Advertising is just as essential to your business as it is to Marshall Field & Co. or the smallest merchant in

your own home town, and you should and must figure it in as one of the actual operating expenses of your plant—just as much as you do your superintendent—your burner—your coal bill or any other expense.

Now, granting for the sake of argument that you admit the importance of publicity as a means of creating a demand for your product, how are you to obtain it?

Suppose there are two or more plants in your town. Go to the owners of these plants and say: "Jones, Smith, Brown, we've been struggling along trying to make brick and tile but we're not selling what we make."

"Let's get together. Let's lay aside petty jealousies and personal prejudices and see if we can't remedy the trouble. There may not be enough business just now for all of us but we can make more business and there will be enough for all."

"Let's form a little association of our own. We'll call it the Champaign Clay Products Association. We don't need any salaried officials—you can be the president and

"We'll each put in \$50 or \$100 in the publicity fund. We'll go to the local newspapers and we will say to the editors that we want to advertise burned clay. We want to create a demand for our products. We want to educate the people of Urbana and Champaign to use burned clay."

Ask the editor to suggest a campaign and get him to map it out—not for a week or two weeks but for the entire year. In two weeks, you may be luke warm.

If you feel you can't write a good strong ad or the editor isn't inclined to do it for you—apply to your favorite clay journal. Either one of them will gladly supply you free with good, paying copy—copy that will teach your people the merits of burned clay.

And don't let up. Don't expect the first ad to sell you a thousand brick. Wait. Keep hammering. Don't become discouraged at the first attempt.

Change your ads every issue. Never let the same one run twice.

See that they tell the story of burned clay. See that they bristle with information. Don't make the mistake of some beginners and think you are saying too much. Your ads are supposed to give information and you can't give information in a line of type—it takes words and words.

If you are persistent with your advertising—if you are consistent—that is if you do not exaggerate and only tell the truth, you'll get the confidence of your readers—of your prospective customers.

It won't be many moons before your next door neighbor will be thinking of burned clay instead of concrete or lumber every time he thinks about building.

And then, when you have reaped the benefits of organized effort locally, do not stop there. See that your home association becomes a

member of your state association, for it is through organized effort we accomplish the best results.

"In Union there is Strength."

And there are the national associations. Every clayworker—no matter how small or large his business may be, needs the assistance of the great national organizations. Join them. Help support them. Attend their conventions and exchange ideas with your fellow clay workers.

The little local campaign you will start will soon grow into a big one—a great national work that will accom-

Compliments BRICK AND CLAY RECORD, Chicago

Get the best out of your farm

When you fail to fertilize your farm right—to till it right—and drain it right, you have failed to get the best out of it.

Successful farming today means scientific farming.

And there is no farm today giving forth its fullest capacity of crops that isn't drained.

Use drain tile freely

Use it correctly—use it judiciously and Mother Earth will respond with a willingness that will surprise you.

Take away the surface water and convey it to a point where it will do some good. Use burned clay drain tile.

Soil rots from excessive moisture and vegetation is smothered. Use burned clay drain tile.

Reclaim your swamps

The great Kankakee swamps, reclaimed by the use of drain tile, is an object lesson to all.

What was once a useless waste today is one of the best producing sections in Illinois.

Reclaim your own swamp land. Make it work for you instead of you working for it. Use burned clay drain tile.

The Champaign Clay Products Association Champaign, Ill.

INSTRUCTIONS TO PRINTER: Set double column, six inches deep. Use nonpareil rule border. Set display in Cheltenham lower case. When this ad appears in your paper, send a copy containing the same to BRICK AND CLAY RECORD, Chicago.

(The above advertising suggestion is one of a series prepared for distribution at the recent contention of the Illinois Clay Manufacturers Association in connection with Mr. Wells' paper. The rest of the series will appear in "Brick and Clay Record" in a department of publicity which will be created in the February 1 issue.)

plish more in putting clay products where they belong than any other single agency.

I want to call your specific attention to local publicity work that is being done in certain cities and it would be a good idea for you to get in touch with the fellows that are backing these publicity movements.

Take, for instance, Cleveland, Ohio. Over there is one of the most aggressive organizations in the country—clay, concrete, lumber or any other industry not excepted.

This little band of brickmakers and dealers got together. They formed a pool—or fund—and they were not stingy about it, either.

These fellows took the title of the Cleveland Face Brick Association. They started out to educate the people of Cleveland to want to use brick instead of lumber or concrete or stucco and they have done it.

They took large advertising space in the local papers. Their ads bristled with information. It was not long before they began to get results because just as soon as the people understood what brick meant to them in erecting their homes they wanted brick.

From this local organization has grown the Ohio Face Brick Association and from that state organization has grown the American Face Brick Association, and the face brick manufacturers of the country have the Cleveland manufacturers to thank for much of the growing demand for face brick all over the country.

Down in Macon, Ga., there is another local organization. Mr. Dunwody is one of the active workers in that organization. It is a matter of history in the clay industry what that little band of brickmakers have accomplished.

Down in Dallas, Texas, the brickmakers tried the experiment of local association work. They used the newspapers and they have created a demand far beyond their expectations.

Evansville, Ind., San Francisco and other cities have done likewise and the success in each of these cities proves the point—that to sell what you make you must let the buyer know you have it.

I might add here that is an easy matter to get a lot of free advertising from your local papers if you only go about it right. And it is particularly easy if you have an advertising contract.

Attractive Pictures Aid Cause.

When you have supplied the brick or hollow tile for an especially handsome residence have a photograph taken and a cut made and go to your local editor and say to him: "I know you want to boost your home town and you also like to print pretty pictures and I have something here that will interest you. Here is a picture of Judge Brown's new house up on College Avenue."

Then, when you give him the cut already for the press, hand him a little descriptive matter and be careful that you have mentioned in an off-hand manner that the house was built with brick supplied by yourself.

Again, it is an easy matter to keep yourself and your business before the public. The local newspaper likes a live wire. Keep in touch with local or national politics and see that you are quoted in your local paper occasionally but be careful about committing yourself on issues that might place you in an embarrassing position, later.

Again, gather up all the data about old brick construction work in your immediate neighborhood. If there is an old red brick school house that was erected in 1856 get a picture and a description of it and see that it is printed.

If there is an unusually fine farm near town that was reclaimed from a famous swamp get a picture of it and a picture of the man who owns it or who redeemed it and a story of how he did it and see that your editor prints it.

It is little stories like these appearing from time to time in your local paper, coupled with the persistent paid ads that appear in the advertising columns that is going to get your people to talking about burned clay. Once they get to talking and thinking about it—the buying follows naturally.

PLANS PUBLICITY BUREAU FOR CLAY PRODUCTS



AN organization that will cover the country with a general publicity campaign for clay products, affiliating with all state and local publicity bodies, is more than likely to be launched on "Publicity Day" during the convention of the National Brick Manufacturers' Association in Chicago next month.

The suggestion took tangible form at a meeting of the board of directors of the Clay Products Exposition Company held in Chicago, January 14, when it was decided to select a committee to investigate the best means for organization, this committee to report during the N. B. M. A.

The idea developed during a discussion of the needs of such an organization at the luncheon of the directors at the Sherman House and was enthusiastically received.

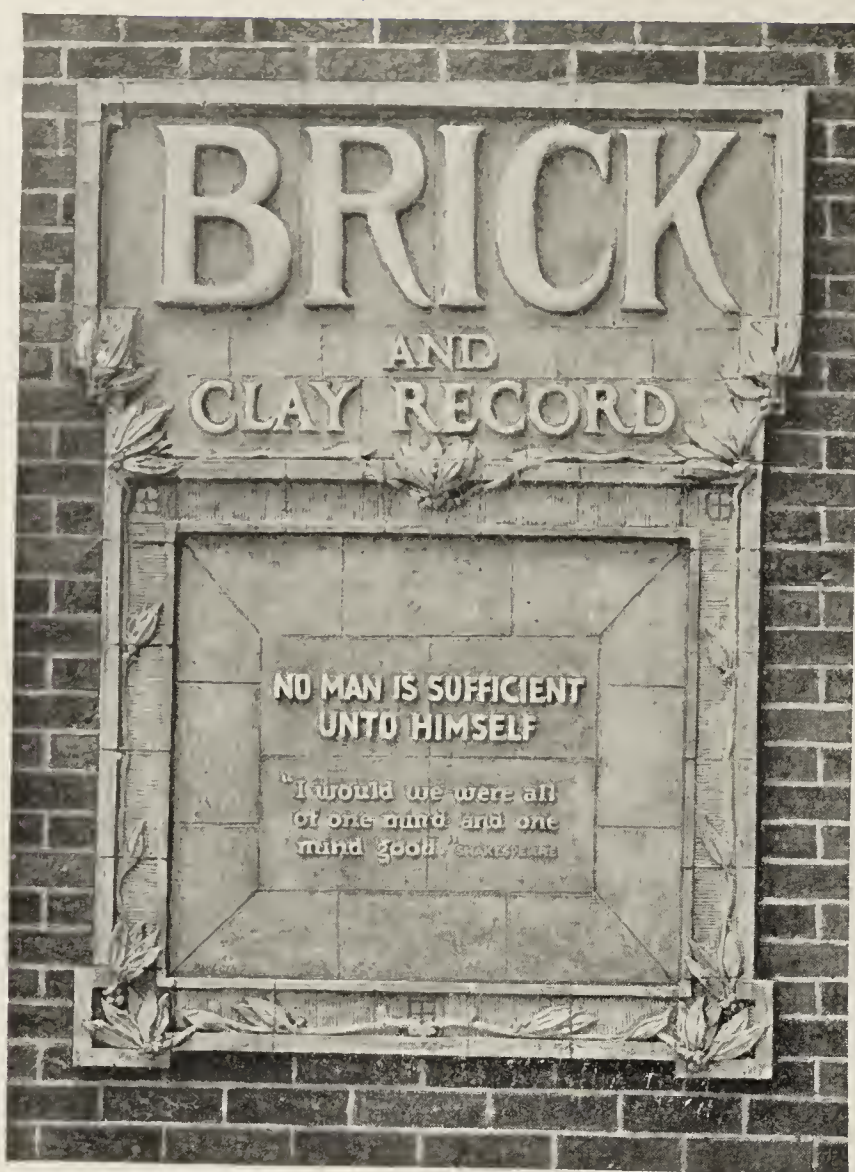
One suggestion was that the organization should be headed by a competent secretary who has had experience in publicity matters, who shall be an executive of no mean ability and who shall be in close touch with the varied clay interests of the country. In addition to the general secretary it was proposed that a competent engineering expert be engaged. It was pointed out that architects and prospective builders can go to any of the compe-

titive industries and receive technical advice and data at any and all times, but that they go begging when they want to get some information of a practical nature in the clay product industry.

Another official suggested as an essential feature of such an organization was a traffic manager.

There was some suggestion that the B. B. A. might be induced to broaden the scope of its work and merge its interests in an association of this nature. There was no representative of the B. B. A. present at the meeting who was empowered to give an authoritative expression, but it is likely the matter will be placed before the B. B. A. at its annual convention during the Clay Show. It was understood, of course, that should the B. B. A. favor the taking up of this work, it would be necessary not only for it to move its headquarters to Chicago, but also change its name in such a decisive way as to indicate the general character of its representation.

Uncompleted plans for the Clay Show were discussed and a policy outlined for future work in connection with the same. Further routine work was disposed of and the meeting was adjourned subject to an early call.



VOL. XLII.

JANUARY 15, 1913

No. 2

THE CLAY SHOW

Considerable space in this issue is devoted to the Second Annual Clay Show. We do this because we feel that as great publicity as possible should be given this movement for the promotion of the clay product industry.

These annual Expositions are among the greatest agencies imaginable for letting the buying public **KNOW** what burned clay **REALLY** is.

They draw thousands and thousands of persons who never knew what brick, or tile, or terra cotta or any of the other products meant to them.

They convert thousands to burned clay and make thousands of immediate or prospective buyers.

The shows are **EDUCATIONAL** in nature but the **EXTENT** of their educational value **DEPENDS** entirely on that **INTEREST** the clayworker himself, takes in them.

What makes the Clay Show a great educational institution are the **EXHIBITS**. If there were **NO** exhibits there would be no clay show.

You can see, then, that the shows **DEPEND** upon the **INDIVIDUAL** support of the clayworkers of the Nation.

Of course a handful of **PROGRESSIVE** manufac-

turers or a small number of **LARGE** manufacturers **COULD** fill up the big Coliseum with **TWO** or **THREE** exhibits, but **THAT** wouldn't **MAKE** a clay show.

To be a **SUCCESS** the Clay Show must be composed of a great **VARIETY** of Exhibits. The **GREAT-ER** the number of exhibitors the **GREATER** the educational value.

Some **SHORTSIGHTED** clay manufacturers excuse themselves from sending in exhibits by saying that they cannot see any **DIRECT** good coming from the show.

That **SAME** short-sightedness is what has kept the clay product industry back.

We look **TOO** much to the **PRESENT** and not **ENOUGH** into the **FUTURE**.

It is the cumulative effect of the shows that benefits you. It is the general awakening of the buying and building public to the advantage of using burned clay that is going to prove **PROFITABLE** to you perhaps not **TODAY** or **TOMORROW**, but in the **YEARS** to **COME**.

We must think of the **FUTURE**—we must work **TODAY** for the harvest of **TOMORROW**.

The farmer sows his seed—not with the idea that in a **FEW HOURS** he will gather in his corn or his wheat, but that he may have a bountiful crop **MONTHS** away.

ALL harvests are gathered in the **SAME** way—whether it is in the grain field or in the clay field.

Clayworkers, look at the Clay Show in a **BROAD-ER** way. Contribute your **MITE**. Throw **YOUR** bread onto the waters that it may **COME BACK** to you tenfold.

Too often you have depended on the **FEW** to shoulder the burden which **YOU** should **SHARE**. Too often you have permitted the **MINORITY** to make **POSSIBLE** that which **YOU** enjoy **EQUALLY** with the others.

No matter how **SMALL** your business may be you have **SOMETHING** that is **WORTH** showing. If you feel the few hundred dollars necessary to make a separate or individual exhibit is more than your business warrants, join in with your state association and see that a creditable showing is made.

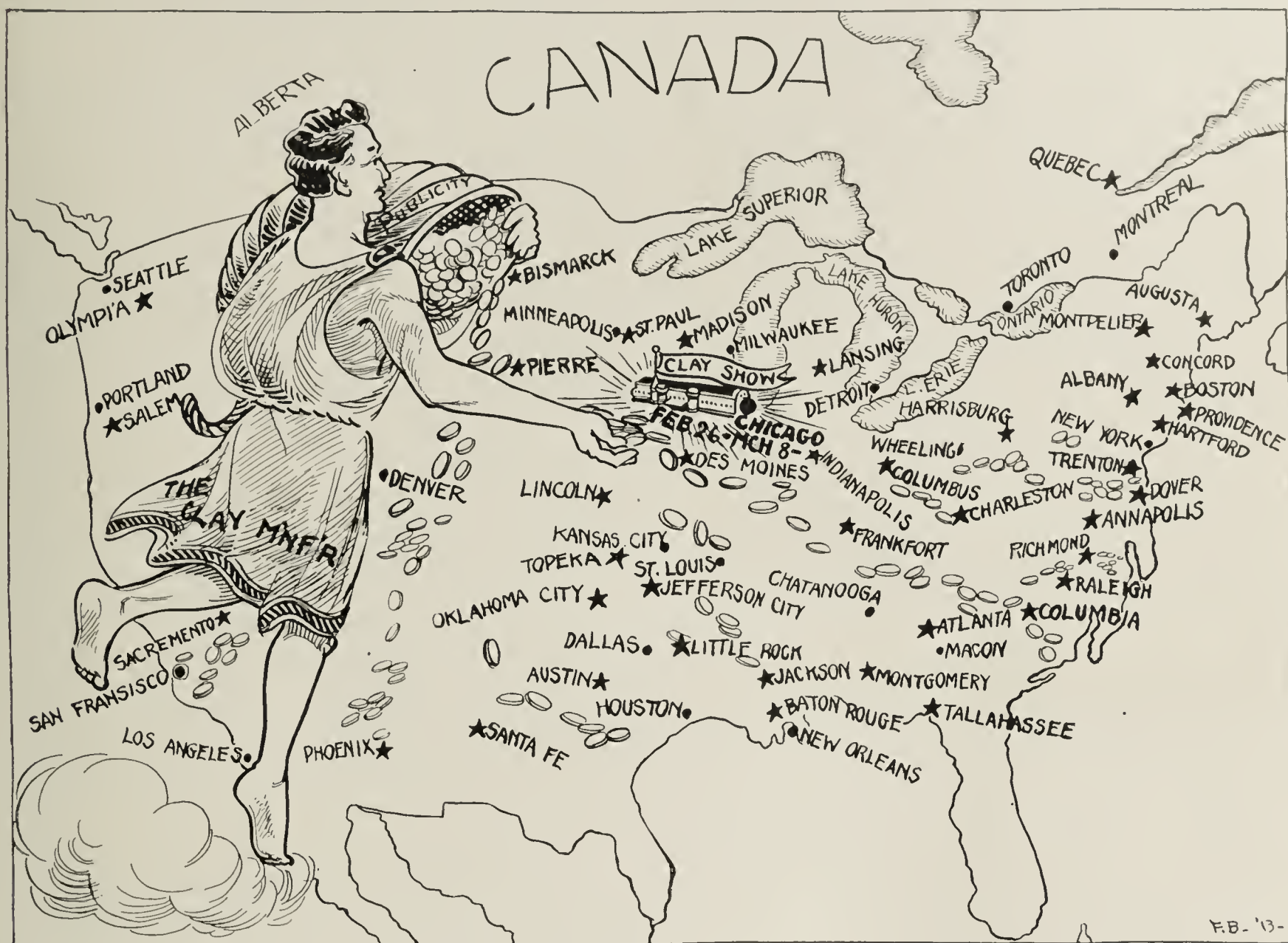
If you have no state organization that is progressive enough to take advantage of this opportunity get together with a few of your neighbors and engage a booth or two booths and let the world know **YOU** are **ALIVE**, at least.

The **EXPENSE** in either case will be **SMALL**. The **GOOD** will be **INCALCULABLE**.

But aside from the **GENERAL** good that the Clay Show does—aside from the **CUMULATIVE** effect it has on the clay industry as a **WHOLE**, there **IS** a direct profit to those that participate.

Among those who attend the Show are architects,

THE CLAY SHOW MEANS NATION-WIDE PUBLICITY



building contractors, selling agents and dealers, as well as prospective consumers.

These architects, contractors and dealers will be there with the **SOLE** purpose of **HUNTING** for something **NEW** in the way of face brick and building brick and paving brick.

Judging from the experience of many exhibitors of last year's show there will be some **VERY** profitable arrangements made with some of these **INQUIRING** visitors.

One brickmaker, for instance—the owner of a plant down in Illinois, made the statement the other day at the Illinois convention that he got the most **SURPRISING** results from the show.

"I received inquiries from many of the Southern states," he related, "and still others from the Southwest. I even got inquiries from the Far West and from Canada. Many of these inquiries were received as late as **FIVE** months after the Show, which shows the impressions gained were lasting. From these inquiries I obtained several agents that have brought me in a most profitable business and one that was in an entirely new field."

This clayworker's experience is given because it has just come to our knowledge, but it is only one of many.

The application of the exhibitors of **LAST** year for space for **THIS** year proves that their participation in the First Annual Show was not disappointing or unprofitable.

As a fact, **MANY** of these applications were accompanied by letters telling of the **GOOD** the writers obtained from the Exposition and promising to bring a **BETTER** exhibit this year than last.

Then, there are the tilemakers and the manufacturers of vitrified sewer pipe who should get a **DIRECT** benefit, to say nothing of the **GENERAL** good their support will do the industry.

Among the visitors who will attend the show—probably a quarter of a million—there will be, as there were last year thousands of farmers **INTERESTED** in drainage and thousands of contractors and municipal authorities who will be **INTERESTED** in sewage.

One tilemaker from a distant state last year made contracts directly as a result of his exhibit that

brought him in profits, exceeding many times the price of his exhibit.

Cases like these could be cited in other branches of the industry but these suffice to carry the point.

Clayworkers of the Nation, listen.

If the appeal to your pride in seeing your state properly represented—if the appeal to your **INTEREST** in the **FUTURE** of the industry as a whole, does not **MOVE** you to **PARTICIPATE** in the Show to be held in Chicago next month, consider then the **SELFISH** end of it.

Aside from the **GOOD** that you will **GAIN** from the **EDUCATIONAL** feature of the Show, there is the opportunity for you to get an **IMMEDIATE** return on your investment.

We believe, however, that you are **BROAD** enough to see the necessity of doing **YOUR** share in the **PROMOTION** of the industry for the years to come and that you will **STRIVE** to take a **PART** in the big Exposition this year.

The time to act is short, however. There are scarcely six weeks yet in which you can make your preparations. What you do will have to be done at once.

Don't be discouraged. There is yet time for you to write to Secretary Hopley of the Clay Products Exposition, Chamber of Commerce Building Chicago, and ask him for information, but you must do it **TODAY**.

Sit down now and write, and then get together samples of your choicest wares and make ready for your exhibit, so that by the time you receive a reply to your letter you will be in a position to rush the work along.

And remember what you do at the Clay Show is building business **FOR YOU** and **FOR** the **INDUSTRY** for the years to come.



CATCHING THE FEVER

The "Get-Together Spirit" is as catching as the measles, whooping cough and the like—once the germ gets planted in a community and has the opportunity to develop.

This was never better illustrated than at the annual convention of the Illinois Clayworkers Association at Champaign last week.

Once one of the best **ATTENDED** state meetings of clay manufacturers and once one of the most **ACTIVE** agencies for the promotion of the industry in any commonwealth, the convention last week showed signs of early dissolution when the registration disclosed a mere handful present.

Secretary Huckins was a most **DISCOURAGED** young man. He had striven hard to get a full at-

tendance. He had brought to play **EVERY** energy in his power to **INTEREST** his members to be present.

When he saw the small but faithful band that had gathered his spirits were at low tide.

But he had not reckoned with his hosts.

What the little band **LACKED** in **NUMBERS** it **MADE UP** in progressiveness—in determination—in aggressiveness and in harmony and unity of thought and action.

And, before the three-days' session had been progressed a few hours, Secretary Huckins' face was wreathed in smiles and despair had turned to hope. Out of that little meeting there **GREW A MOVEMENT** that is destined to place the Illinois clay manufacturers **FAR AHEAD** of other states in association work, in activity and in progressiveness.

You see that little band of the faithful were **WORKERS** themselves. They represented the most progressive element of the state. Each member there saw the way the tide was turning and took it on the turn.

Another annual convention with such a discouraging opening would mean the death knell of the association and a setback to the industry in the state which would take much hard work to overcome.

Elsewhere in this issue is a report of the convention. In this report is told the story of what the convention did.

The movement that was launched to awaken the interest of the somnolent clayworker is a most creditable one and there is no doubt but what it will bring great results.

Here is good luck to you Prairie State hustlers. May your example be followed by every state in the Union!



ONE MAN'S CASE

There is a peculiar situation at Chatwick, Ill. It has to do with the relationship between a manufacturer and a bricklayer.

Our old friend, George J. Walter, is the manufacturer. Mr. Walter is the only clayworker in the community. He makes brick and tile but despite the fact that his little city has a population of 1,200 and is in the center of a very wealthy section, he does not manufacture very many brick.

And there is a **VERY GOOD REASON** for it, too.

Mr. Walter can't get the brick laid satisfactorily. If he is able to get them laid at all the **WORK IS SLIGHTED** and the charge for the labor is **EXORBITANT—EIGHT DOLLARS PER THOUSAND**, which includes the helper.

And there is a very good reason for **THIS** situation also.

You see there is only **ONE** bricklayer in Chatwick. This bricklayer happens to be **ALSO A MANUFACTURER OF CONCRETE BLOCK**.

This, you must agree, **DOES** make a most peculiar situation, doesn't it?

Naturally Mr. Walter is at the mercy of this hydra-headed laborer. The bricklaying-concrete block manufacturer **PREFERS**, of course, to see **HIS OWN BLOCK** go into a building. He not only **MAKES** a profit on the **BLOCK** but he **MAKES** a profit **LAYING** them into a wall.

Chatwick is not a very large city and with the exception of a building boom a few years ago following a fire that almost destroyed the business section of the little place, there has been little construction work of late years.

However, with what cellar work and foundation work there is Mr. Walter **COULD** do quite a little business in brick in addition to his more profitable manufacture of drain tile, providing, of course, he **DIDN'T** have this handicap of the bricklayer.

Why not send out and get another bricklayer, you ask?

That, on the face of it, **DOES** look like a **REASONABLE** solution to the problem.

But Mr. Walter says he has **TRIED** that and he finds it **IMPOSSIBLE** to get a bricklayer to come there.

Now, you understand the peculiar situation. Here is the way it works out:

Suppose Mr. Walter has a prospective builder interested in brick. Suppose he even gets this prospective builder to the point of choosing brick. What happens?

Why, the brick-laying concrete manufacturer hurries around to the buyer and proceeds to tell him the advantage of using concrete block. Even if the buyer **STILL** prefers brick he is soon made to understand that the concrete manufacturer is the only bricklayer in the town and he naturally figures that he will get **STUNG** if he chooses brick.

The ultimate result is that the builder chooses concrete.

Mr. Walter considers his case **HOPELESS** and has decided he **CANNOT** do anything to help the situation. Practically he has devoted all the attention of his plant to the manufacture of drain tile and has let a very profitable brick business slip away from him.

But Mr. Walter is wrong. His case is **NOT** hopeless.

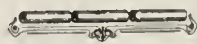
What Mr. Walter **SHOULD** do is this:

He should look around him and pick up some enterprising young man in his community. He should lay the situation before him and point out the profitable features of a working agreement with him.

If the young man is **LONG-HEADED** he will lend himself readily to the plan. He will make arrangements to attend one of the trade schools that teach bricklaying. If he cannot do this **WITHOUT** aid, Mr. Walter should see that he **GETS** that aid.

Then, with his diploma and his ability to lay brick, the young man would prove not only a good money-maker for himself but also a most profitable investment for Mr. Walter who made it possible for him to learn a good trade.

This is the solution of Mr. Walter's problem according to the editor of this journal. Perhaps our readers may offer him a still more satisfactory one. "Brick and Clay Record" will be glad to receive suggestions and we know Mr. Walter will appreciate anything that will **SHOW** him a **WAY OUT** of his Difficulty.



HOW PROFITS ARE MADE

Profits are made through watching the **LITTLE** things.

Some persons make the mistake of thinking that the **ONLY** way to **MAKE** money is to keep a weather eye on the **BIG** things and the **LITTLE** things will take care of themselves.

There is a certain Illinois clayworker who has proven the value of keeping in close touch with the details of his business.

This clayworker attended the annual convention of the Illinois Clayworkers Association the other day. He was selected to read a paper before that body and because of his **SUCCESS** in looking after the **LITTLE** things he was asked to talk on "Cost Accounting."

This successful clayworker is none other than D. C. Haeger of the Haeger Brick & Tile Co., which operates several **VERY** profitable plants in Northern Illinois. In another section of this journal Mr. Haeger's paper is reprinted in full because it offers some most **VALUABLE** suggestions.

If you take the time to read Mr. Haeger's article—and every clayworker should because it will be a few minutes most profitably spent, you will soon discover that Mr. Haeger has worked out a system free from red tape and that he **KNOWS** what he is talking about.

Mr. Haeger hasn't gone into the details of his system. It would take several pages of this magazine to do that. What he has attempted is to give a very general idea of what he considers the **PROPER** way to keep track of what it **COSTS** him to make his clay products.

A short talk with Mr. Haeger, however, convinces one that not a piece of ware leaves his plant that he doesn't **KNOW HOW** much it **COSTS** him to make,

which is **MORE** than the **AVERAGE** clayworker can say.

To show how slipshod **SOME** manufacturers are we report a conversation overheard at the State convention:

"What does your twenty-inch tile cost you?" a certain tile maker was asked.

"Forty dollars," he replied, and his face was wreathed in smiles as he added that he got \$240 for his product.

Mr. Haeger, who was a party to the conversation, made no comment, although his face **ALSO** was **WREATHED** in smiles.

Later this is what Mr. Haeger did say:

"That man **THINKS** he is making \$200 on every thousand feet of drain tile," he remarked. As a matter of fact he probably is losing money. That tile cost me \$140 to make and I believe I am making it cheaper than he is because I have a greater output, more up to date machinery and keep track of things."

The same tilemaker who said he was making his twenty-inch tile for \$40 was overheard to complain later to a little knot of fellow tilemakers that he Had a "**BAD** year" and that he made **NO** money on the season's work.

What is the answer?

To give you some idea with what exactness Mr. Haeger keeps tab on his costs this incident is related:

Not long ago his plant had a big contract to figure on. He knew there was a strong competitor after the same contract and that he would have to bid **CLOSE** to bedrock.

Now, like all **REAL BUSINESS** men, Mr. Haeger makes **SURE** of a **PROFIT** on a contract or he does **NOT** take it. He figured that the tile would cost him so much and that he must have just so much or he could not make a profit.

His lowest selling point was a certain figure, but he knew his strongest competitor would be **UNDER** that.

It was absolutely necessary that he knock off \$1 a thousand on his tile. This meant, however, that he would be going that much lower than his profitable selling price. He **COULDN'T** and he **DIDN'T** do that.

Still, he **GOT** the contract and he knocked off the \$1 and he **DIDN'T LOSE** the \$1 either. Paradoxical isn't it?

Here is the way he worked it:

In fixing the cost of his wares Mr. Haeger takes into consideration the handling of the burned ware from the kiln to the stock yard and the cost of the handling of the ware from the stock yard to the cars. Experience has taught him that the cost of handling the tile from the stock to the car is just \$1 per thousand on this particular size of ware.

With this established cost in his mind, he figured that if he could take the tile **DIRECT** from the **KILN** to the **CAR** he would **SAVE** that dollar and he made the bid with that understanding, explaining to his customer that delivery was dependent upon the drawing of the kiln. This arrangement was entirely satisfactory to the customer. Haeger **GOT** the contract and he didn't lose a cent from his established profit and still the bid was \$1 cheaper.

Close figuring, you say? Of course, but it is being able to figure in this manner that makes the clayworker a **REAL BUSINESS MAN** instead of a **GUESSER** and that puts him in the **SUCCESSFUL** class rather than with those that **COMPLAIN** at the close of the season of having made **NO** money.

Watch the details—the **LITTLE** things, and the **BIG** things will take care of themselves.



FATAL AUTOMOBILE ACCIDENT.

John F. Burke, Well Known in Clay Circles, Receives Fatal Injury.

John F. Burke, of Rochester, N. Y., well known in the clay world a frequent attendant at the National Conventions, met an untimely death in an automobile accident which occurred Nov. 30. While returning from a trip to



John F. Burke.

Avon, N. Y., the machine with Burke turning out to avoid a collision with another machine, skidded and turned completely over, throwing Mr. Burke onto a pile of crushed stone. He sustained serious injuries, his spinal cord being almost severed. He underwent an operation at the hospital, from which he rallied, but other complications which developed later caused his death on New Year's day. Mr. Burke was 28 years of age, in the best of health and he made a brave fight for his life, against overwhelming odds, and he kept up a cheerful attitude to the last, even though he knew the injury was fatal.

DEFORMATION POINTS OF SEGER CONES

Expert in Foreign Journal Discusses Manner in Which Device is Used, Covering the Subject Completely

The following article by Prof. Charles S. Kinnison of the United States Bureau of Standards, Pittsburgh, was abstracted from a paper by Dr. Reinhold Rieke in "The Sprechsaal," a German clay journal. It treats of the subject of deformation points in a most exhaustive and comprehensive manner:

By CHARLES S. KINNESON,

Of the Department of Commerce and Labor, Bureau of Standards



IN as much as Seger cones are artificial mixtures of different oxides, carbonates and silicates it scarcely needs to be shown that they have no sharp definite melting points like the metals or most chemical compounds. This fact has been so much emphasized, in literature pertaining to the subject, that it is remarkable how often we read of researches, in which Seger cones are used for precise temperature measurements and it is not to be wondered at that such researches have caused unfavorable criticism of the use of cones for determining temperature.

The Seger cone affords no absolute temperature measurement, but rather a good relative comparison of the fusibilities of different materials under similar conditions. They afford a means of knowing the progress of the changes undergone by mixtures, similar in constitution to the cone, in as much as they are both subject to the same burning conditions. It is well known that clay and ceramic mixtures show different behavior regarding shrinkage, porosity and transparency, depending on whether they are burned in a small laboratory test kiln or under ordinary commercial conditions, even though the burning temperature, is the same in both cases. The important factor is the duration of the heat treatment. Further, it is evident that the fineness of grain, as well as the intimacy of the mixture are of great influence on the behavior of the cone under heat treatment, yet these factors can be practically overlooked, since the cones are always made in the same way, the method of grinding and mixing never changing.

Deformation Temperature of Cones.

The object of this experiment was to determine the deformation temperatures of cones 022-15 in different kilns in order to learn:—

Whether, in the same kiln, under approximately the same burning conditions, as regards similar rates and duration of heating, the deformation temperature of any particular one is always approximately the same.

2. How great the differences in deformation temperatures in the different kilns.

The procedure of the investigation was as follows: The cones to be tested, protected as well as possible were set in the kiln or muffle and the temperatures measured with a platinum—platinum iridium thermo-couple, placed as near as possible to the cones, the temperature being read to the nearest 5 deg. Cones whose deformation temperature could not be identified clearly, because of the cloudy condition of the kiln atmosphere, or cones which fell against each other on deforming, are not included in the accompanying tables.

To facilitate study the cones are divided into 5 groups as follows:

1. The lowest cones 022-016, of a composition designed by Simonis.
2. This new cone series 015a-011a, which co-incide neither in their deformation temperatures nor composition with the earlier series 015-011.
3. The old series, still in use, 010-6.
4. The new series, introduced in 1908, 010a-6a.
5. The higher cones 7-15, composition designed by Seger.

1. Cones 022-016.

Table I contains the temperatures found in different kilns, the kilns being:

I. Muffle of $\frac{1}{4}$ cubic meter contents, wood fired.

II Muffle of $\frac{1}{2}$ cubic meter contents, wood fired.

III. Soft porcelain biscuit kiln, wood fired.

IV. Hard porcelain biscuit kiln, coal fired.

V. Hard porcelain biscuit kiln, wood fired.

Table 1.

Cone	I.	1	II.	2	3	III.	1	IV.	1	V.	1
022	600°	600°	600°	595°	580°	580°	640°	640°	640°	640°	640°
021	655°	655°	660°	660°	660°	660°	665°	665°	665°	665°	665°
020	675°	675°	675°	675°	675°	675°	675°	675°	675°	675°	675°
019	680°	680°	690°	685°	685°	685°	695°	695°	695°	695°	695°
018	690°	700°	700°	695°	695°	695°	710°	710°	710°	710°	710°
017	715°	710°	720°	720°	720°	720°	740°	740°	740°	740°	740°
016	740°	730°	750°	735°	735°	735°	770°	770°	770°	770°	770°
015a	770°	770°	785°	770°	770°	770°	800°	800°	800°	800°	800°
014a	780°	795°	800°	785°	785°	785°	815°	815°	815°	815°	815°
013a	800°	850°	830°	810°	810°	810°	835°	835°	835°	835°	835°
012a	815°	885°	870°	825°	825°	825°	850°	850°	850°	850°	850°
011a	825°	910°	915°	895°	895°	895°	905°	905°	905°	905°	905°
010a	830°	930°	945°	930°	930°	930°	950°	950°	950°	950°	950°

The rate of heat treatment of the different burns is as follows:

Temp.	Temperature Increase in Minutes.						
From	I	II ₁	II ₂	III	IV	V	
600°-650°	12	22	20	28	100	60	..
650°-700°	12	22	25	32	150	58	..
700°-750°	11	35	25	64	...	77	..
750°-800°	13	35	27	44	...	45	..
800°-850°	20	42	32	60	...	72	..
850°-900°	20	36	45	52	...	58	65
900°-940°	17	35	55	48	...	42	58

Cones Melted in Consecutive Order.

At this point, it should be emphasized that these as well as the following measurement of the melting points are affected by unfavorable errors, of which the two most important ones might be mentioned. Frequently, especially in the porcelain kiln, it was difficult to recognize the exact time at which the cone was completely bent and further, the thermo-couple was obviously not equidistant from all the cones. In lieu of this fact and considering the small and entirely unavoidable variation in composition, the uniformity of the melting points of cones 022-016 found under similar conditions, is rather remarkable. In all cases the cones melted in consecutive order, the intervals between the melting points being about 15 deg.-25 deg. The greatest interval lay between 022 and 021, being about 60 deg. while the melting points of 020 and 019 lay closest together and in fact fall simultaneously under certain conditions. This happens, for

instance, in burn III, during which the rate of heating was very slow. This burn also shows the characteristic influence of a very slow rate of heating upon the deformation points of cones 022-015a. Generally speaking, the cones deformed considerably earlier here than in the other burns, the difference being as much as 75 deg. in some instances. During this slow heat treatment, the deformation points of cones 017 and 016 were very close to each other.

The deformation points of cones 020-016, obtained in an electric furnace, where 600 deg. C. was reached by increments of 3-4 deg. per minute, are as follows:

Cones	Deformation Temperature	Difference
020	670°	15°
019	685°	15°
018	700°	15°
017	725°	25°
016	745°	20°

These values are approximately the same as found in burns I-II-IV.

By a still slower heating (600-700 deg. in 3 hours, or 1 deg. in about 2½ minutes) cones 020 and 019 came down simultaneously. On further increase in temperature from 670 deg. to 735 deg. in 1½ hours, approximately the same deformation points were found for cones 018-016 as above, namely 018 = 700 deg., 017 = 725 deg. and 016 = 734 deg.

The lowering of the deformation points of these most fusible cones through long continued heating at a point shortly beneath the deformation temperature, is caused by the high content of an easily fusible fritt. The Zettlitz kaolin, tending to raise the deformation point, is on continued heating gradually dissolved in the softening fritt present in great excess, whereby the cones are finally brought to their deformation point.

2. Cones 015a-011a.

The deformation temperatures found for these cones are given in table I and plotted as described, in Fig. 1.

De-Vitrification Takes Place.

Between the deformation points of cones 016 and 015a, there is a difference of 30-40 deg., as found in burn III by long heat treatment, although cone 015a melts considerable lower here than under ordinary conditions. Furthermore the behavior of cones 013a-011a is noteworthy.

this phenomenon is not noticeable in the lower cones is due to the increase of alumina content, to the low acid content in proportion to the alumina to the decrease of boric acid and to the increase of the alkaline earths, lime and magnesia at the expense of the alkalies.

As did the lowest cones, these also fell in consecutive order, even in burn I where the rate of heating was very rapid, and where the difference in the deformation temperatures falls down to 10 deg. At this point, it is difficult to explain the great difference in deformation points of cones 013a and 010a in burn II.

To determine whether the slow rate of heating was responsible for the increase in deformation temperature of these cones the following investigation was made in an electric furnace:

Cones 016-010a were heated at the rate of 3-4 deg. per minute and the deformation points found agree well with the values found in burn II.

Cone	Deformation Temp.	Cone	Deformation Temp.
016	745°	012a	875°
015a	775°	011a	910°
014a	805°	010a	945°
013a	825°		

In another burn the temperature was raised very slowly as follows:

From 650-700 in 1 hour.	From 850-900° in 2 hours.
From 650-700 in 1 hour.	From 850-900° in 2 hours.
From 700-750 in 2 hours.	From 900-940° in 1 hour.
From 750-765 in 5 hours.	

The deformation temperatures found are as follows:

Cone	Deformation Temp.	Cone	Deformation Temp.
016	715°	013a	875°
015a	740 ²⁵ °	012a	890 ¹⁵ °
014a	745°	011a	930 ⁴⁰ °

From these results it is evident that a very slow heat treatment may raise the deformation temperature of cones 013a-011a, while it is lowered for cones 016-014a.

3. Cones 010-6.

In this group we will consider the old cones 010-6. The limits of this group justify themselves, in that there are two cones series of these numbers in use, not corresponding exactly in deformation point or composition, namely, the old cones 010-6 which contain Fe₂O₃ from 010-3 and the new series 010a-6a which contain no Fe₂O₃.

Table 2 gives a summary of the values found for these cones in different furnaces as follows:

		Table 2.													
Cone		I		II		III		IV		V		VI		VII	
		1	2	1	2	1	2	1	2	1	2	1	2	1	2
010		900*	905°	910°	915°	955°	930°	955°	980°	960°	980°	950°	980°	950°	920°
09		940	935°	945°	945°	970	970	970	1015	1000	1015	1000	1000	950	950
08		....	....	....	....	1020	1000	1015	1035	1045	1035	1045	1045	980	980
07		....	....	....	....	1060	1045	1055	1075	1055	1075	1055	1055	1020	1020
06		....	....	....	....	1075	1075	1070	1095	1065	1095	1065	1065	1050	1050
05		....	....	....	....	1090	1075	1090	1095	1110	1095	1110	1060	1070	1070
04		....	....	....	....	1105	1110	1090	1105	1120	1095	1120	1095	1080	1080
03		....	....	....	....	....	....	1110	1135	1100	1135	1100	1100	1095	1095
02		....	....	....	....	1125	1135	1125	1145	1100	1145	1100	1140	1100	1100
01		....	....	....	....	1155	1160	1140	1145	1105	1145	1105	1160	1110	1110
1		....	....	....	....	1155	....	1155	1145	1130	1145	1130	1165	1110	1115
2		....	....	....	....	1155	....	1160	1150	1150	1150	1150	1180	1135	1135
3		....	....	....	....	1155	1175	....	1160	1160	1160	1195	1190	1140	1145
4		....	....	....	....	1185	1180	1170	1165	1160	1165	1195	1195	1160	1160
5		....	....	....	....	....	....	1175	1170	1165	1165	1205	1165	1165	1165
6		....	....	....	....	....	....	1185	....	....	....	....	....	....	....

These deform at a lower temperature on sharp heating than on a long heat treatment, behaving oppositely in this respect to the above mentioned low cones. The reason for this seems to be, that owing to the long and slow heat treatment, by which a softening of the individual ingredients occurs, silicates of a more refractory nature are found, which raise the melting point more or less, depending on their amount. De-vitrification also takes place, as is evident from the fact that if these cones are heated for a considerable length of time at a temperature shortly beneath the deformation point, they exhibit not a smooth glossy surface, but rather a matt texture. That

- I. Muffle of ¼ cubic meters content, wood fired.
- II. Muffle of ½ cubic meters content, wood fired.
- III. Soft porcelain kiln of 1¼ cubic meters content, wood fired.
- IV. Soft porcelain kiln of 6 cubic meters content, wood fired.
- V. Hard porcelain kiln of 18 cubic meters content, wood fired.
- VI. Hard porcelain kiln of 18 cubic meters content, coal fired.

(To be concluded in February 1 issue.)



This Department is Open to Our Readers for the Discussion of Any Problems in Clay Manufacture Which May Arise. Let Us Have Your Views.

THE PRIZE WINNING ARTICLE.

Practical Suggestions Which Make for Greater Efficiency at the Clay Plant.

We are pleased to announce that the article submitted by Austin Pugh, superintendent of the W. S. Dickey Clay Co.'s plant No. 1 at Deepwater, Mo., won the \$5.00 prize offered in our Dec. 15th issue. For all-around practical suggestions, all of which are pertinent and easy to follow, Mr. Pugh's article was considered the best of those submitted. The others will appear from time to time in this department. Mr. Pugh's article is in full as follows:

The time to overcome trouble is before you get into it by obtaining a general knowledge of mechanics and steam engineering. Make yourself familiar with every part about your steam shovel. Learn to keep in touch with its general condition. Then, if anything goes wrong, you know at once what to do to overcome the difficulty. If the engineer tells you there are some parts worn out, you want to know for yourself whether repairs are really needed. Keep supplied with a list of parts and be in shape to order the right piece at the right time and then you must know if it is put in right. Every time you get a measurement of any piece, put it in your book, kept for the purpose.

Become familiar with your main engine. Watch closely every thing that is done in repairing your engine. Be sure the piston rings are not leaking steam. Do the same in this that you do with your steam shovel—learn the name of every part about your engine. Open your feed water-heater frequently, if it be a closed one, and see that the tubes are not leaking, as hot water represents cash and besides the accumulation of water in your exhaust pipe may back up into your engine cylinder and knock the head off, and probably wreck the cylinder.

Become familiar with the way to cement your leather belts. Go into the pump house and watch the boiler feed pump while it is being overhauled. Become familiar with every part. Get the name of the pump, also its size and number. Get list of parts and be ready to order quickly any part required, keeping yourself supplied with any part that is likely to give out. Then when you get in trouble you can get out quickly. Watch the pipe lines closely and when you see that a pipe is giving out cut a new piece for it and put it in at the first opportunity.

Way to Keep out of Trouble.

The way to get out of trouble is not to get into it. Don't be afraid you will get dust on your collar and tie, but when

anything goes wrong with any of your dry or wet mills, brick machine or pug mills, get right in and see all there is to see. Get all the information you possibly can in the shortest time. Be on the job all the time. Be first on the job and the last away. See every thing about the plant every day, then when any one comes to you with trouble you will understand him and know what he is talking about.

Watch your pug mill. See that the knives are all of the right length and angle and that they are mixing the clay right, as poorly mixed clay will make trouble. Be sure your boiler fireman is opening the mud valve frequently, as an accumulation of mud results in a burned or bagged sheet, which calls for the boilermaker. Be sure the fireman understands his work and burns his coal to the best advantage.

Take good care that the clay pit is being operated so as to secure the best results. Keep samples coming through the kilns of various clays and mixtures thereby keeping in close touch with the nature of the clay. Watch the ware coming out of kilns. Don't let kiln floors and flues get choked and filled up.

Go over all of your line shafting and see personally that it is level and in a true straight line, thereby lessening the friction to a minimum. Have the belt man go over all the belts when not running and put in new laces where it is likely to give trouble while running. Don't let the pinions on your brick machine and pug mill wear out before you order new ones. Order in time, then wear the pinions out and change them when the machines are idle, thereby avoiding a loss of time.

Figure how much your machine will make per minute and then make the machine run ten hours.

Equip yourself with sufficient information so you can tell the men what to do and not depend on them telling you what to do.

In ordering a piece for any of the machines about the plant, be absolutely sure you are right and that you actually need it, and that it is going to fit when it comes.

A DIFFERENCE OF OPINION.

Exception Taken to Statement as to Proportions of Stacks and Flues.

In discussion of Mr. Vogt's article, "Kiln Construction and Operation," appearing in your issue of January 1st, I wish to take decided exception to his statement that the "height of a stack has absolutely nothing to do with the draft" by giving him a few quotations from "Stirling," pages 169-173, published by The Stirling Consolidated



Austin Pugh Wins \$5.00 Prize.

Boiler Co., New York, now a part of the Babcock & Wilcox Co. of New York. "The height and diameter of a chimney depend upon the kind and amount of fuel to be burned, * * * and the altitude of the plant above sea-level."

"Draft is the difference in pressure which causes gases to rise in a stack. If the air inside a stack be heated, each cubic foot of it will expand, hence its weight will be less than that of a cubic foot of colder air. Therefore, the unit pressure at the stack base due to the column of heated air will be less than that due to a column of cold air of equal height. This difference in pressure, like the difference in head of water, causes a flow of cold air into the base of the stack. But, if in its passage to the bottom of the stack, the cold air has to pass through a fire, it in turn becomes heated, hence it also will rise and the action will be continuous."

"For the determination of the proportions of stacks and flues, the Stirling Company's procedure depends upon the principle that if the diameter of the stack is sufficiently large for the volume of gases to be handled, the intensity of draft will depend upon the height; therefore,

"Select a height of stack which will produce the draft required by the character and amount of fuel to be burned per square foot of grate surface, then determine for this stack the diameter necessary to handle the gases without undue frictional losses.

"A stack of a certain diameter, by increasing its height, can be made to produce the same available draft as one of a larger diameter, the additional height being required to overcome the greater friction loss. Consequently, among the various stacks which could meet the requirements, there must be one which can be constructed cheaper than the others."

There is much more material in the same reference upon this subject including examples and formulae, but I believe that this effectively answers Mr. Vogt's challenge.

The authenticity of the Stirling Boiler Co. data is unimpeachable, and I agree with Mr. Vogt that the deluge is headed this way. Knowing that you would not intentionally publish any errata in the pages of the "Brick and Clay Record," I will appreciate this correction.

H. L. Longenecker, Chicago, Ill.

PRODUCER GAS IN DOWN-DRAFT KILNS.

California Burner Declares it Practicable if Kilns are Near Producer—Continuous Kiln Most Economical.

In reply to a letter from Anton Vogt, Esq., appearing in your issue of Dec. 15th, 1912, regarding the proposition of burning in up and down-draft kilns with producer gas, as it is done in continuous kilns will say:

That there is absolutely no question about it. Producer gas can be burned in down-draft kilns, bearing in mind that the requirements for gas-firing are the same for the down-draft as in the continuous. With a set of producers in one place sufficiently below the floor level of the kilns so that the gas will rise without mechanical means, after conveying the gas to the down draft kilns we must heat the air of combustion to 1,000 deg. F.

To do this without incurring great expense we must have the waste heat of a cooling kiln as air for combustion.

If the distance between kilns is so great that the proper heat for combustion cannot be maintained on account of loss by radiation and convection, or if the gas producer

is at too great a distance from some of the kilns, then the kilns must be taken down and re-built closer together.

If we wish to have the firing condition of the continuous, why build isolated down-drafts, when a continuous is the linking of square down-draft kilns together. There will be a saving of one end wall for each chamber in construction and a fuel economy of 75 per cent over the down draft. In the first firing, the end chamber of the continuous kiln uses more fuel and is more expensive than a down-draft kiln, but the heat used is re-used in the adjoining compartments.

If the products of combustion and the cooling heat are allowed to pass directly out of each chamber instead of passing through the series, there is no more economy than in the down draft kiln.

California.

THE BRICKLAYING QUESTION.

Both Sides of the Matter Discussed by Interested Parties—Efficiency the Point in Dispute.

Several articles, which have recently appeared in "Brick and Clay Record," from time to time on the relation which bricklaying bears to the advancement of the brick industry and especially an article in our December 15th issue, "What Makes Brick Houses Cost More?" by Irwin Charles Walker, have provoked considerable comment and discussion in building and bricklaying circles. We have received a number of letters from our readers on the subject, from which we have selected the following, which give views on both sides of the question. As the solution of the problem is a vital one which will affect materially the future of brick in the building world, we publish them in full. We trust both sides will study the matter truthfully and carefully, with the full understanding that the interests are or should be mutual, for what benefits one will naturally help the other—more brick sold means more brick laid—more work for the bricklayer. The point in question seems to be the amount of brick laid in a day more than the wage paid. In other words efficiency of the workman should determine the wage paid. The letters follow:

We have followed with much interest the various articles which have appeared, from time to time, in "Brick and Clay Record," dealing with the bricklaying problem, and the perusal of the most recent item on this subject, entitled "What Makes Brick Houses Cost More?" prompts us to give some of our own experiences in this connection when we were building some kilns.

In turning some circle arches, it is not always practical or convenient to get wedge brick of the correct angle, therefore it is usual to take brick of a shorter radius, and occasionally slip in a straight brick in order to keep the radial joints as near true to the center as possible. During the progress of the work in question, we saw a 70-cent per hour mason, using a side arch brick to turn a semi-circle arch of a longer radius than the brick was designed for. As previously mentioned a few straight brick would have enabled him to turn the desired curve, but he tried to turn the arch using the wedge brick only, until the radial joints were entirely out of place, and the brick lipped on each other to such an extent that as the work progressed the arch developed "saw teeth" both on the inside and outside. The mason was in nowise phased by this condition of affairs, and when the time arrived for him to place the last brick in position, he inserted the key brick upside down—thus proving his ingenuity in extricating himself from an embarrassing situation.

The work on the main walls of this kiln was of about the same quality, two courses being made to merge into one, or what is known in brickwork, as a "hog." For the benefit of those, who fortunately for them, are not familiar with the term, we will say, a "hog" in brickwork corresponds to a "fault" in geology, and is usually remedied by the bricklayer by an intricate piece of mosaic work, whereby two courses are made to member with one course, the whole being artistically stuccoed with fireclay or mortar to hide it from the gaze of the curious. Of course, such work as this has to be torn down.

In order to get some reliable figures bearing upon the efficiency of these 70-cent per hour masons, we took occasion to make some observations while they were engaged upon some straight work—building bag walls in another kiln—where the record of the number of brick laid could very easily be kept. The result of this test, extending over half a day, showed 54 brick laid per mason hour. Cost, mason, 70 cents; helper, 35 cents. Total, \$1.05, or \$19.40 for 1,000 brick.

The contracting mason, who had furnished these bricklayers, was notified that we would not pass such work, and that he must take the men off, and substitute more experienced masons. This he promised to do. The following morning, after the starting whistle had blown, we were surprised to see the same three men again on the scaffold. We refused to allow them to proceed with the job, and they left the plant. They, however, returned in about two hours and stated that they had instructions from the secretary of their union for them to settle the matter amicably by accepting two hours' pay each, for the five minutes while they were on the scaffold, although not a brick was laid. We failed to see it this way, and they left. After another interval of about two hours, they appeared again upon the yard and offered to compromise for half an hour's pay each, otherwise they would, through their union, tie up the entire operation, involving about 70 men. We suggested that they call upon the secretary of the union, and get him to visit the plant, and see the class of work given us, and should he then think it justified any further payments from us, we would take it under consideration. Later in the day, the secretary phoned us for details of the "dispute," which information we furnished, and since that time we have heard nothing further in connection with the matter.

Unfair to First-Class Workman.

Certain portions of the work done indicated that one of the men was a first-class workman, and the manifest unfairness of this man's position prompts the following suggestions: Trade unions are doubtless very good in some respects, but we are of the opinion that the members of such unions, and particularly the brick masons, should have a system of examination, whereby the efficiency of the proposed member should be determined, and if it is desirable to enroll every man regardless of his ability, who may be working at this specific trade, then they should be graded into 1st, 2nd and 3d class according to their ability, with a minimum and maximum scale of pay arranged for such work, and card issued to the member noted accordingly. We believe some unions have some such an arrangement, but not the bricklayers.

A few years ago, there was trouble in Washington, D. C., between the builders and paperhangers. A contractor in an open letter to the press, explaining his position, stated that he had no objection whatever to the union, nor was he averse to paying the wages demanded, in fact, would gladly pay an increase on that figure to

secure competent men, but he did object to paying \$3.50 a day to a man who was not competent to mix paste for a good paperhanger.

We entirely agree with the views of this Washington contractor, and we do not object to paying 70 cents per hour to a competent mason, although we think such a price entirely out of proportion to the amount of training required in this particular trade, and further we are not opposed to organized labor, but we do most strongly object to paying such wages to men who limit themselves to a few hundred brick for a day's work, or to men whom we have to fire off the job, and tear down the work they have done.

The examination and graded scale of pay plan suggested by us, would inflict no injustice upon anyone concerned—contractor or mason—and would insure fairness to the competent mason.

Illinois.

Should Lay Two to Three Thousand a Day.

"Brick and Clay Record": I just want to say that I am a union bricklayer. I never worked in Chicago but I have worked in Cleveland, Pittsburg, Columbus, Louisville, Baltimore, Washington, and a great many other places, and I have never seen or heard of any condition such as Irwin Charles Walker writes of in your latest issue, about the union bricklayers. I have taken contracts to lay the brick and pay the helper for less than six dollars per thousand and made money, and I was not called down by the union.

A union bricklayer can put in as many brick as he is able in eight hours. No union has anything to say about the number of brick a man should lay or the number of helpers or the helper's pay. If a bricklayer does not do you a decent day's work discharge him and the union will not kick. It is true that the average bricklayer should lay two to three thousand brick per day on common work, and the average man will lay that amount. Irwin Charles Walker does not know what he is talking about. You could get some information on the subject by consulting some officials of your local bricklayers' unions. If you want to be fair to the bricklayers put this in your next issue.

R. Newbold, Toronto, O.

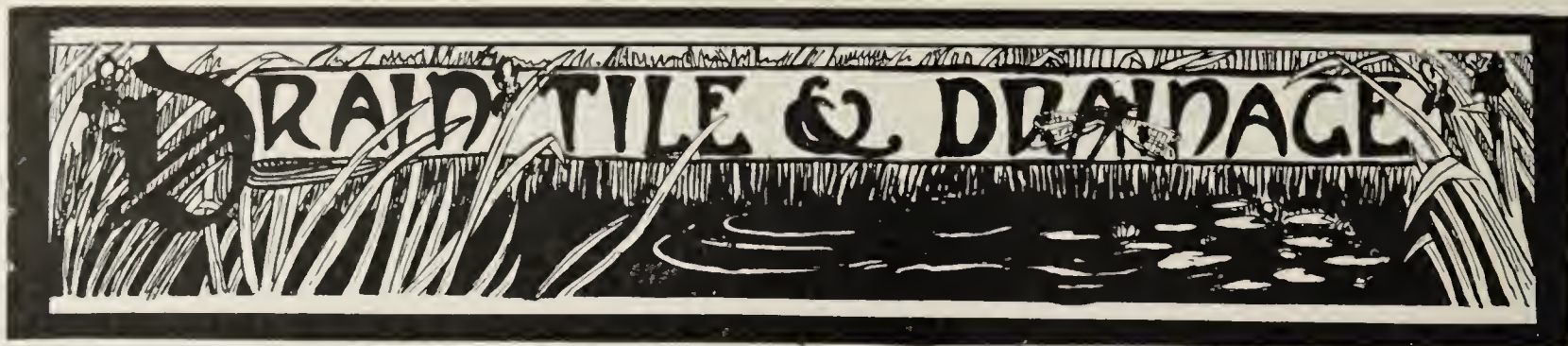
WHO'S WHO IN THE CLAY FIELD.

Grover C. Miller, well-known in clay circles, through his connection with the Indiana Drain Tile Co., Brooklyn, Ind., one of Indiana's largest drain tile plants, since its incorporation in 1905, and who for the past five years has been in charge of the books and records of the company, has resigned his position and has become identified with the Old Hickory Chair Co., Martinsville, Ind. Mr. Miller will, however, still retain his stock holdings in the Indiana Drain Tile Co.



Grover C. Miller

It will be remembered that the Indiana Drain Tile Co. was the originator of the ingenious shale planer, formerly shown in this journal, which mixes the clay as it is planed from the bank.



DESTRUCTION OF CONCRETE BY ALKALI.

Wm. P. Headden, Chemist of Colorado Experiment Station, Gives Interesting Statistics.

Deductions, from actual experiments and observation show that cement tile is absolutely worthless, when laid in soil exposed to alkaline waters. Mr. Headden's report of his observations is of value, especially to manufacturers of clay tile in the Southwest, where the alkaline waters abound.—(Editor's Note.)

The principal condition under which good Portland cement has failed to fulfill the requirements of the structure in which it was used, seems to have been where the structure was exposed to the action of sea water. Such exposure has not resulted uniformly in the destruction of the cement, so that even this condition, i. e., the exposure to sea water, a solution comparatively rich in magnesian chlorid and sulphate, may not have been the determining factor in the trouble noted.

The following case of deterioration may be of some interest as it presents some new points. There were sent to me some months ago, a number of fragments of concrete tiling which had been laid but from eight to nine months. They had been disintegrated to such an extent that one of the samples was simply a white putty-like mass mixed with sand. There was nothing about this sample remotely suggestive of concrete. Another of the samples consisted of a fragment of the tile, the interior portions of which had been wholly decomposed, while there still remained an outer and inner portion in good condition, or comparatively so. Another sample had been attacked on the inner side leaving the mass of the tile outside of the zone of decomposition apparently sound. The line of decomposition was sharply limited and showed distinctly, but even in this case there remained a thin layer of cement on the inside.

I do not know whether the tile were running full of water or not, probably not, as the fragments seem to be parts of 16 or 18 inch tile. The importance of this point is simply this, that it would answer any question in regard to the separation of solid "alkali" salts on that portion of the tile above the water line. That such a separation of these salts should take place does not seem very probable in this case.

The Point of Attack.

The point of attack so far as the samples at my disposal indicate, is either in the center of the cement mass or near the inner surface. In either case we are almost compelled to assume the action of the water, i. e., of the salts held in solution. At the same time we see the resisting power of the outside and inside surfaces, which are evidently richer in cement than the inner portion of the mass of the tile.

The sand used in making the tile was quite fine. The proportion used was 5:1. We can readily see that the individual masses of cement in the interior mass of the tile must be small and readily attacked by solutions of salts capable of reacting with the cement.

It seems quite evident that the agents causing this dis-

integration of the cement must gain access to the interior portion of the mass of the tile in the form of a solution, but it is a question whether this solution is the same in strength and character as the water in the drain.

The drain waters obtained, say at a depth of four feet, contain as a rule a smaller amount of salts in solution than the ground water. The salts present are the same but their relative quantities vary. The usual salts present in the ground waters are, sodic sulfate, calcic sulfate, magnesian sulfate, sodic carbonate, and sodic, in some instances also magnesian chlorid. In the drain waters we have the same salts but their relative quantities are different, the most notable feature being the relatively large amount of sodic carbonate.

Sulfates Disintegrate Concrete.

The substances claimed to be the most active in effecting the disintegration of cement are the sulfates. In the case of sea water the explanation offered is that the lime of the cement decomposes the magnesian salts present in the water whereby the lime goes into solution and the magnesia is deposited in its stead, causing a bulging and disintegration of the work owing to its greater bulk. The principal magnesian salt in sea water is the chlorid, the deleterious action of which on cement is not established, but it has been shown that magnesian sulfate acts energetically. The most active agent in decomposing concrete is the sulfuric acid of the sulfates carried in solution. Again solutions of gypsum have been shown to act detrimentally on concrete by forming with the tri-calcic aluminate a sulfo-aluminate.

The water acting on these tiles whether it be ground water or drain water is very bad. One of the two small samples sent to me contained 1252.6 grains per imperial gallon, of which 493.5 grains were sulfuric acid (SO_3) with an extremely large proportion of magnesia. The other contained 542.3 grains per imperial gallon, with 42.31 grains of magnesian oxid or 7.8 per cent of the total solids. I have examined a number of waters from this section and find the ground water uniformly heavily laden with the sulfates of lime and soda with comparatively large quantities of magnesia, especially if the water comes from near the surface as it necessarily must in the case of drain waters. In addition to the above constituents there is uniformly some carbonate present which for the present purpose we may consider as sodic carbonate.

We have then an ample supply of these substances present which are known to act deleteriously on cement, i. e., the sulfates, a portion of which is magnesian sulfate, and in addition there is so much sodic carbonate present that its action cannot be neglected.

For the present I will assume that the cement used was at least an average Portland cement with not more than two per cent. of calcic sulfate added. Assuming this to be correct, the action of the waters on the tile shows an interesting line of action.

A preliminary examination of the white decomposition product indicated the presence of a large amount of water, also of considerable quantities of sulfuric and carbonic acids. The decomposed mass was washed with distilled

water to remove as much sand as possible. Examination of the wash water showed that it had taken sulfuric acid, lime and soda into solution. The portion soluble in distilled water may have been partly derived from other sources but probably came, for the most part, from the altered cement. The wash water, therefore, was evaporated to dryness and the residue added to the insoluble portion and the whole dried at 60°C.

The loss on ignition in the analysis of the decomposition product agreed fairly well with that obtained by difference, but owing to the presence of alkalies, carbonates and sand the results of direct ignition are not to be relied upon except to show that the difference indicates the amount of water present with reasonable accuracy.

The composition of the water acting on this tiling may safely be assumed to be represented by the following analysis of a sample of Arkansas river water, essentially a return water, taken at Rocky Ford.

The summation of the analysis presents a rather large excess over one hundred which gives an excess of about one grain in the total amount of salts present. The excess of bases shown in the analysis as combined is not necessarily due to bad analytical work. The waters of our mountain streams show an excess of acids over the bases, but the alkalies forming efflorescences on our soils and alkaline waters, frequently show an excess of the bases, but seldom so large as in this case.

The ground waters of the Arkansas valley have essentially the same composition; they of course, vary in the amounts of mineral water, total solids, held in solution. The two small samples of drain water sent with these tiles illustrate this very well, one of them carried 1252.6 grains, while the other carried less than one half as much 542.3 grains in an imperial gallon.

The salient features in the composition of the salts present in the ground waters of this section are the large amount of sulfates and the presence, of carbonates. The amount of chlorine or the corresponding chlorids is not large and are probably subordinate agents in the alteration of the cement.

No Cement Can Withstand Sea Water.

Mr. R. Feret says: "No cement or other hydraulic product has yet been found which presents absolute security against the decomposing action of sea water." Further, "The most injurious compound of sea water is the acid of the dissolved sulfates." Again the same writer says: "It is noteworthy, however, that chloride of magnesia is almost without action, while the sulfate of magnesia acts energetically upon cement. * * *"

It has further been established by Candlot, Michaelis and Deval working independently, that calcic sulfate unites with calcic aluminate forming a hydrated sulfo-aluminate which expands greatly on crystallizing and is soluble in water.

It is assumed that magnesian sulfate acts upon the calcic hydrate set free by the setting of the tri-calcic silicate, forming calcic sulfate which is then capable of uniting with the calcic aluminate with bad results.

The ground waters found in the lower portions of our irrigated sections contain a mixture of the sulfates of soda, lime and magnesia, with which there is usually associated some carbonate. Some of these waters are essentially solutions of sodic sulfate with a little sodic carbonate; others especially drain waters contain calcic and magnesian sulfate with some carbonate, possibly sodic carbonate.

The knowledge of the fact that our drain waters contain carbonates led me to try the action of a mixture

of sodic sulfate and carbonate on the coarsely ground concrete. This mixture attacked the cement rapidly yielding a white decomposition product rich in carbonic acid. This result is no other than what we would expect. If the tri-calcic silicate in setting really liberates four molecules of calcic hydrate, as we suppose, the reaction should be accompanied by the liberation of a corresponding amount of sodic hydrate.

The sodic hydrate thus freed is capable of further attacking the silicates and possibly the aluminates, carrying silicic acid, alumina and lime into solution, probably as hydrated silicates. The treatment of the cement with a mixed solution of sodic carbonate and sulfate showed that it is a fact that calcic carbonate is formed and also that silicic, alumina and lime do go into solution and that too without the aid of free carbonic acid.

No care was taken to make the solution of mixed salts even approximately of the same strength, as the ground waters, and no ratio between the salts was observed, simply, that the solution was a weak one; two to three grams of sodic carbonate to the liter with five or six grams of the sulfate. The time of the experiment was 14 hours. The time was short, and the solution not as rich in salts as some of our ground and drain waters. The tiles on the other hand are exposed to the action of similar solutions, some weaker but others stronger from the time of being laid till taken out, in this case eight to nine months. In view of these considerations it is not strange that the mass of concrete should be softened and destroyed.

Results of Experiments.

Using the results of these rather crude experiments we may interpret our analyses as indicating that the cement has been deprived of silicic acid; it originally contained 22.50 per cent but the hydrated decomposition product contains only 10.98 per cent or 14.16 per cent calculated on a water free basis. While the ratio of the weight of the decomposition product to the original weight of the cement is not known, there is no evidence that there has been any increase in the weight which would invalidate the preceding observation and a second experiment with cement and a solution containing sodic sulfate and carbonate leaves no question about the removal of silicic acid, alumina and lime by waters containing these salts. The analyses also suggest the removal of a relatively large amount of lime.

The changes effected in this case are quite consonant with the views quoted excepting the formation of so large a proportion of carbonate, evidently calcic carbonate due to the action of the sodic carbonate in the ground water. The presence of sodic carbonate in a solution so rich in lime may seem improbable, but this has been shown to be not only possible, but a fact.

The samples of deteriorated tiles sent to me do not justify any inferences whatever in regard to the part that may have been played by the expansive force of newly formed crystallizable compounds. The thickness of the tile and the amount of material involved is so small that this factor is negligible and the results presented are probably wholly due to chemical action.

This subject is of some importance as concrete structures, bridges, culverts, foundations, etc., are being erected in places where they will be subjected to the action of such waters.

Most of the cretaceous shales are, so far as my observation goes, rich in alkalies, calcic sulfate, etc., and concrete foundations laid in these may be acted on prejudiciously.

POTTERY NEWS

POTTERY ACTIVITIES.

Many New Enlargements and Improvements Being Planned for the New Year.

Inclement weather and the non delivery of construction materials has held up speedy construction of two 15-kiln potteries in Newell W. Va. The Homer Laughlin China Co. is erecting one of these plants, and the Edwin M. Knowles China Co., of Chester, W. Va., is building the other.

On top of this new kiln capacity, the Taylor, Smith & Taylor Pottery Co., on January 1, assumed a one-year lease on the pottery formerly operated by the William Brunt Pottery Co., in East Liverpool, O., and will operate it. It is reported that this company will build a 12-kiln plant near its present one in Chester, W. Va., and that plans for this new plant have already been drawn and ground secured to the west of the Edwin M. Knowles plant. The residents of Chester have raised a bonus of \$15,000, which they will present to the Taylor, Smith & Taylor Co., for this new improvement.

At Zanesville, O., announcement has been made by George S. Brush, president of the Brush-McCoy Pottery Co., that the capacity of that plant is to be increased to such an extent that a production of \$500,000 annually will be possible. This firm is making a specialty of art pottery and stoneware.

At East Liverpool, O., the Hall China Co. has given up the manufacturing of a general line of domestic pottery, and has just announced that hereafter the firm will confine its efforts to the manufacturing of a new line of vitreous porcelain specialties from special molds and for utility purposes. This will be confined in the main to the making of coffee urn and steam table liners and cooking jars. The firm is the only one in the United States making such a line of pottery ware.

Stoneware pottery workers in the Zanesville and Crooksville district in Ohio will not strike this season as was reported, instead, the differences existing between employer and employe are being referred to the state board of arbitration for adjustment. Report was to the effect that these pottery workers would strike January 1. Under the scale of the last year, these potters were paid \$1.75 for a day of ten hours and two years ago they were

given an increase of 15 cents a day. An increase of 20 per cent in their wage is now being sought.

Shower baths are to be placed in the new E. M. Knowles plant in Chester, W. Va. This is the first pottery in the world where such an innovation has been provided for the workers.

The extended Christmas loaf of the western potteries for years past is a thing of the past, so it seems. A week was the longest time any one plant was idle. Christmas and New Year's day were the only idle days of the last season in the majority of the western plants. Orders with the manufacturers are of such a character that it was impossible to close the plants for even a fortnight.

The Flower Pot Industry.

The manufacture of flower pots has assumed remarkable proportions during the past decade and many new plants have sprung up owing to the fact that those making the goods could not fill the demand. A score of years since, greenhouses were few and far between, while now they have become quite a common sight in every community.

In going over the stocks carried or used by floriculturists, many new makes are to be seen, patterned after the Standard, Syracuse or Detroit red types, yet in many instances improved in quality, art and general design.

Aside from the universally approved wares of the Syracuse Pottery Co., and the Detroit Flower Pot Co., there are now many other wares in the market, among them the product of A. H. Hews & Co., Cambridge, Mass., whose plant has been in operation since 1765 and now has an immense output. The Whilldin Pottery Co., of Philadelphia has a capacity that is so great that shipments can be made within 24 hours A. R. O. Among the Ohio factories is that of the Mt. Gilead Pottery Co., which turns out a fine article. The Peters & Reed Pottery Co. at S. Zanesville is prized for its cemetery pot ware; Clark Bros. Pottery Co. of Crooksville, O., is also making a distinguished success of its red pots. The Keller Pottery Co. of Norristown, Pa., is famous for its Azalea pans and pots. The Ionia Pottery Co., Ionia, Mich., is an up-to-the-minute concern and other enterprising flower pot concerns are the Paducah Pottery Co., Paducah, Ky.; the Weis & Schmidt Pottery Co., Milwaukee; Geo. Keller & Son, of Chicago, all of which believe in the extensive use of printer's ink.



Two Carloads of the Popular Duke of Wellington Machinery En Route to One Customer.

The accompanying illustrations are reproductions from photographs recently taken at the plant of the Wellington Machine Co., Wellington, Ohio, showing two carloads of machinery ready for shipment to one customer. The "Duke of Wellington" stiff-mud press is evidently on its way to lighten the work of some progressive clay-worker and assist him to increase his output and profits.

OUR CALENDAR HARVEST

**Enterprising Concerns Make Use of Calendars for
Publicity Purposes—Many Beautiful
Designs Reach Our Desk**

The calendar, always an effective advertising medium, has lost none of its prestige, despite the many other souvenir novelties with which the market is surfeited. Many calendars of many sorts have reached our desk, one of the most attractive of them being that of the Warren B. Ferris Brick Co., Columbus, O., the central figure of the decorative scheme being "Mingled Shades," an excellent and lifelike portrait of the young colored man who has charge of the Ferris observation touring car. Attired in blue livery trimmed with gold, he makes an attractive picture. Surrounding the central picture is a frame, typifying a brick wall in which the "Ferris Brick" trade-mark appears frequently inserted in panels.

The Potomac River Clay Works, which manufactures a large variety of clay products at Alexandria, Va., sent to the trade a neat and serviceable calendar in two shades of brown, the decorative feature being provided by a reproduction of the painting "1053 Charge" by O. Richer.

The Brown Instrument Co., Philadelphia, Pa., in conformity with its accustomed policy, of "doing things up brown," is issuing a nobby calendar in several shades of brown, on the upper portion of which appears a reproduction of the "U. S. S. Wyoming," the largest warship in the world, which in common with all the U. S. war ships is equipped with Brown pyrometers for indicating the stack temperature.

We are indebted to the I. C. Baird Son & Co., Parkhill, Ont., Can., for one of their 1913 calendars on which appears the portraits of H. C. & Oliver Baird, also cuts of various types of clay machinery made by the Baird Company, which is one of the oldest in the field, having been established in 1869.

While a "yellow streak" is not as a rule a matter for boasting, the Broderick & Bascom Co., St. Louis, Mo., has made its "Yellow Strand Wire Rope" famous in the clay world, and the splendid calendar this company is sending to the clay trade cannot but attract much favorable attention to this necessary adjunct to the clay plant.

C. K. Williams & Co., manufacturers of the "Anchor Brand" dry colors and fillers is extending a New Year's greeting to its friends through the medium of a memorandum calendar upon which appears a drawing in colors of its plant No. 1, at Easton, Pa., which boasts of having the third largest brick smoke stack in the world.

The Deckman-Duty Co., manufacturers of the famous "Metal Block" at Cleveland, O., living up to its reputation for doing things in a large way, is issuing an immense 3-ft. calendar. The upper portion shows a splendid reproduction of the painting, "Trophy of the Hunt."

"In the Grampian Hills," a splendidly colored painting showing a flock of sheep returning homeward over the Grampian Hills under the watchful eye of a faithful shepherd dog richly decorates the large calendar sent us by the Tuttle Brick Co., which has been making brick at Middletown, Conn., since 1842.

The Roessler & Hasslacher Chemical Co., 100 Williams St., New York City, following its usual custom, has selected a Grecian figure for the decoration of the beautiful 1913 calendar it is issuing entitled, "Waiting at the Fountain."

That the Reynoldsville Brick & Tile Co., has an eye

ever alert to the beautiful is evidenced by the artistic calendar which it sends out each year. The one for 1913 is a study in green and white. The subject, "The Fairest Flower," from a pastel by Frank H. Desh, being a young lady, tall and divinely fair, who is the embodiment of grace and beauty.

A birdseye view of the brick plant of the Barber Asphalt Paving Co., Des Moines, Ia., appears on a neat and attractive calendar which the Barber Company is sending out, as a reminder of the fact that it produces the celebrated "Des Moines" vitrified paving brick and block.

The calendar sent out by E. M. Freese and Co., manufacturers of brick tile and fireproofing machinery, Galion, O., will be found especially adaptable to the busy clay man, the lettering white on a dead black background making the figures easily read.

THE DELIVERY QUESTION

**Always a Serious Problem—New Inventions Make
for Greater Ease and Safety in Loading
and Unloading of Brick**

One of the last points to be considered by many of the most careful managers, and yet which often offers the greatest possibilities in cutting down unnecessary expenditures, is the question of deliveries. Possibly this may be explained on the theory that costs are considered complete when goods are ready for market and delivery cost is counted as an "overhead" expense, a term that often covers a multitude of leaks.

The motor truck is now largely coming into use because of reduction in time, large loads carried and consequent saving in driver's hire, though the upkeep otherwise, especially if hauls are short and many deliveries small, is liable to equal or exceed that of the horse-drawn equipment. In addition the initial cost is heavy, with consequent large depreciation in values. Also some municipalities are limiting the weight of loads that they allow carried on account of wear and tear on pavements.

In very many cases, therefore, the horse-drawn equipment still retains the advantages and the question is how to deliver the most material in a given time and in the best condition.

After years of study of conditions the Auburn Wagon Company of Martinsburg, W. Va., has perfected its "20th Century Rear Dumper," recently patented and better known as the "Martinsburg Brick Wagon," and although 800 to 1,000 brick is a good load ordinarily, the same team can haul 1,200 to 1,500 with the same effort on the "Martinsburg Brick Wagon," the greater ease of draft being accomplished by balancing the load so the front gear carries as much as the rear one, and by shortening the wheel base from 9 to 10 feet which is usual to about 5 feet.

The body is easily dumped, without use of power, other than that easily applied by the driver. When dumped, the rear end of the body remains about 8 to 10 inches from the pavement, allowing the material to slide out easily, without chipping and breaking.

Another feature frequently overlooked is the advertising value of a well finished delivery vehicle adapted for the use. A continually displayed advertisement of this kind far excels a stationary sign or advertisement.

It is understood that the Auburn Company is completing this body with turn-table arrangement to dump from either side or rear end and adapted for use on chassis.



Conditions from the Atlantic to the Pacific as Reported by Our Expert Observers— Market Fluctuations and Industrial Prospects

NEWS OF THE CLAY WORLD.

The Kingman Tile Works, Kingman, Ind., of which M. E. Howrey is the proprietor, has had a big run during the past season and reports that sales have been "tip top." The company expects by spring to clean up its yard, selling to the local trade, which cuts out the shipping expense. Their dry shed is being remodeled, which will materially reduce handling expenses.

Thomas N. Stilwell and Horace C. Stilwell have sold their interest in the Indiana Brick Co., at Anderson, Ind., to Frank W. Makepeace. These shares were bought for the sum of \$50,000. Mr. Makepeace now controls 95 per cent of the stock of this concern. Preparations will be made immediately for the rebuilding of the plant, which was destroyed by fire last winter. It is expected that the plant will be in operation when the season opens up.

Large consignments of chinaware, worth millions of dollars, are being held up by the United States Custom Officials, because the shippers refuse to pay the advanced duty. The revenue was raised when the manufacturers increased their prices.

The Hill & Smith Brick Co., at Paducah, Ky., filed articles of amendment to change its name to the Hill & Karnes Brick Co., since Ernest Karnes has taken over Mr. Smith's interests.

Recent announcement has been made of the dissolution of the well known firm of architects, Messrs. Ross and MacFarlane, Montreal. Mr. David H. MacFarlane will continue his practice in the same city, and Mr. George A. Ross with Mr. Robert H. Macdonald have formed a partnership under the firm name of Ross and Macdonald.

A considerable amount of the very important work of the firm now dissolved will be carried to completion by Messrs. Ross and MacDonald, and it is expected that announcement will soon be made of new work of considerable magnitude to be erected during the next building season.

The Warren B. Ferris Brick Co., Columbus, Ohio, as a part of its publicity campaign sent out boxes of candy during the holidays, each piece of candy bearing the well-known trade mark, "Ferris Brick."

The Cedar Rapids Brick Co., at Cedar Rapids, Iowa, which recently made improvements to the extent of \$16,000 on its plant, will make numerous other additions during the coming year, and thus bring the plant up to the highest state of efficiency.

The Norman Clay Tile Co.'s plant at Nevada, Mo., will soon be completed. All kinds of tile will be manufactured, as there is an abundance of fine shale on its land. The success of the new concern is assured, and the plant will be enlarged as the business grows.

The directors of the Chanute Brick & Tile Co., at Chanute, Kan., express themselves as being well pleased with present business and the prospects for the spring.

The Bay City Brick & Tile Co., Bay City, Texas, of which J. E. Kenisell is manager, has recently re-equipped its plant with a stiff-mud machine and automatic cutter made by E. M. Freese & Co., Galion, O., which gives the plant a daily capacity of 40,000.

Lincoln S. Morrison, Southern representative of Chambers Bros. Company, of Philadelphia, Pa., is ill at the St. Joseph Infirmary, Atlanta, Ga., with typhoid fever. He was taken sick at Palatka, Fla., while spending the holidays with his family and taken to the Atlanta hos-

pital on December 28th. His physician states that the worst appears to be over, and Mr. Morrison hopes to be taken home soon.

Geo. F. Flinn, representative in Boston, Mass., of Ernest Wiener Co., of New York, designers and builders of Wiener industrial railways, now has his office at 201 Devenshire Street, Boston, Mass. Mr. Flinn is a resident of Boston.

The Chestnut Ridge White Brick Co. of New York has decided to discontinue the manufacture of brick at its plant at Kunkletown, Pa. The company will carry on the business of buying and selling of front brick, tile and terra-cotta as heretofore, and being relieved of the manufacturing end of the business, expect to greatly increase its other business.

A series of consular reports on the markets for American-made machine tools in Latin America will be issued in the near future by the Bureau of Foreign and Domestic Commerce. Lists of firms and individuals who sell and use machine tools in the various countries, are a valuable feature, and considerable attention is given the sales methods and credit terms.

The Glasgow Brick Co., Glasgow, Mont., is looking forward to a splendid year in 1913. It states that owing to the fact of the country settling up so fast, much building will undoubtedly be done the following year.

We are informed that the plant of the Ochelata Brick Co., Ochelata, Okla., has been razed and the machinery sold. This company has been out of business for more than a year past.

M. M. Bushong, formerly manager of the Fort Scott (Kan.) Brick Co., whose plant suffered a severe loss by fire two months ago, has resigned his position to take a similar position with the American Vitrefied Brick Co., Caney, Kans., whose plant has a capacity of 50,000 brick per day.

The Bucyrus Co., manufacturers of excavating machinery has recently changed its New York address to 30 Church St., New York City, which office is in charge of C. S. Reed, who is assistant sales manager of the company.

We are informed that the property of the New Britain Brick Co., Clayton, Conn., was purchased by Richard B. Murray for approximately \$14,000. It is understood Mr. Murray will place the plant in active operation after repairs are made.

The A. C. Ochs Brick & Tile Co., Springfield, Minn., is contemplating making considerable additional improvements to its plant including a new boiler, engine and stiff mud machine.

Adam Baab, Canal Dover, O., whose plant was destroyed by fire more than a year ago, is reported to be contemplating entering the business again in the near future.

H. Brewer & Co., Tecumseh, Mich., have equipped the plant of the Sprang Clay Products Company at Yeddo, Ind., with a No. 98 machine and dies.

J. M. and Carl Cutshall, contractors, of Brazil, Ind., are making a specialty of clay plant construction. They not only build complete plants but construct kilns and dryers of all varieties for established plants. Not long ago they finished the rehabilitation of the Continental Brick Co. at Aledo, Ill.

The following machinery manufacturers had representatives at the 35th Annual Convention of the Illinois Clay Manufacturers' Association, in Champaign, Jan. 9-11: H. Brewer & Co., Arbuckle & Co., Chambers Bros. & Co., J. D. Fate Company, American Clay Machinery Co., and

J. W. Hensley. Chambers Bros. & Co. were the only one to have an exhibit.

The What Cheer Clay Products Company, What Cheer, Ia., have just entered an order through the Chicago branch of the Dodge Mfg. Co., for an additional quantity of Dodge goods, the order including material for three lineshafts and some conveyors.

NEW PLANTS AND ADDITIONS.

W. B. Garriott of San Augustine, Texas, has a deposit of fire clay which he is desirous of having developed and would like to get in touch with parties who could furnish capital for promoting the deal.

It is reported that Montreal, Canada, will be the home of a new brick plant. The new Mount Royal Brick Company is said to be one of the concerns interested in this project.

We are informed that Mr. Clarence Cosby of Richmond, Va., is about to erect a \$12,000 residence and desires to communicate with manufacturers of clay building materials, especially fireproofing.

The Pennsylvania Impervious White Brick Co., at Wilmington, Del., has been incorporated with a capital stock of \$350,000.

E. E. Chapman, of Bradentown, Fla., and associates will establish a brick plant with 25,000 daily capacity. Mosaic tile will also be manufactured.

Tracy's brick yard, Arcota, Cal., contemplates installing drying sheds.

The Thomas Electric Porcelain Co., of Lisbon, Ohio, will double its present capacity by erecting additional kilns.

Paul M. Willets, of Pittsburgh, Pa., is buying clay lands at Wickliffe, Ky., to be developed by a Pittsburg syndicate.

Charles Taylor & Co., of Cincinnati, O., will establish a fire brick plant at Enterprise, Ky.

The Johnson-Porter Clay Co., of Paris, Tenn., has leased clay lands near Henry, Tenn., which it is planning to develop.

The T. H. Winston Co., of Cincinnati, O., has been incorporated with a capital of \$10,000, to manufacture clay products. Dana Pinkerton, G. B. Jolly and W. G. Brown are among the incorporators.

The Hinde Brick & Tile Co., at Sandusky, O., has increased its capital stock from \$100,000 to \$150,000.

The Decatur Brick Mfg. Co., Decatur, Ill., has been incorporated with a capitalization of \$100,000. The new company will manufacture and sell brick and other building materials. The incorporators are John F. Mattes, Edward D. Mattes and S. A. Tuttle.

The Coral Ridge Clay Products Co., Coral Ridge, Jefferson County, Ky., has been incorporated with a capital of \$100,000. The incorporators are W. D. Roy, L. D. Roy and C. L. Gerring. The concern will make tile and other kindred products.

The Cardiff Vitrified Brick Co., at Cardiff, Md., has been incorporated with a capital stock of \$75,000.

The American Brick Co., at Chicago, Ill., has been incorporated with a capital of \$2,500. It will manufacture and deal in brick and other clay products. The incorporators are J. H. Butler, Frank A. Howard and William R. Watson.

The Malakoff Press Brick Co., Malakoff, Texas, filed an amendment changing its name to Texas Clay Products Co., and increasing its capital stock from \$100,000 to \$250,000.

J. M. Brown, M. J. Bond and H. W. Dye of Seattle, Wash., have incorporated under the name of the Capital Shale-Face Brick Co., with a capital of \$100,000. The new company will make and sell brick, tile, etc.

The Buffalo Creek Coal & Brick Co., at Pittsburg, Pa., has been incorporated with a capital of \$250,000.

The Murray & Hart, Inc., of Newington, Mass., has been incorporated to manufacture brick, with a capital stock of \$50,000.

The Summitville Tile Co., at Summitville, Ind., was partly destroyed by a fire of unknown origin. The loss amounted to \$40,000, of which \$16,000 was covered by insurance.

The National Fire-Proofing Company's plant at Port Murray, N. J., will be enlarged and will give employment to 200 men instead of 62. Work on the new plant is to be started this month and will be finished about the first of April.

THE PACIFIC COAST.

San Francisco, Jan. 10.—The Brick Builders' Bureau of San Francisco is preparing to issue an Advertising Album, illustrating uses of brick in building construction that is expected to be a winner. In addition to copious illustrations, it will contain exhaustive information concerning the use of brick, with particular reference to all classes of construction in this city. The material for this book was compiled almost entirely by Nathaniel Ellery, manager of the Brick Builders' Bureau, who is widely known as an expert on modern building methods and has had many years' experience in this city and state. This fact will give the book increased value in the estimation of builders, and is expected to bring good results in the increased use of clay products for building purposes. As a result of his engineering experience, Mr. Ellery has become convinced that the popularity of other materials than brick for above-ground construction has little basis in the comparative merit or ultimate cost of the materials. Time, he says, will certainly demonstrate the superiority of clay products for its fireproof qualities and from the standpoint of general durability.

The Masons' & Builders' Association of San Francisco, the organization of bricklaying contractors, held its 37th annual banquet and ball on Saturday evening, Dec. 14, in the ballroom of the Palace Hotel. Over 150 of the San Francisco building contractors were present with their ladies, and the occasion was a great success from every point of view. James Wilson, president of the Builders' Exchange, who can construct witty phrases as well as skyscrapers, acted as toastmaster. The menu card, illustrating in a humorous and at the same time historical way the growth of the builder's art from ancient to modern times, was a gem worthy of preservation as a souvenir, and the menu itself was as good as the card, or better. Appropriate music was furnished by an orchestra of five pieces. Among the guests of honor were Chief Murphy of the fire department, Chief Building Inspector Morgan, and Geo. E. Gallagher, Ralph McLaren and Edward Nolan of the Board of Supervisors.

Several new sewer jobs will be begun in the near future, one of the largest being at Bakersfield, Cal., where the bond issue amounts to \$200,000. Bids were opened Jan. 6, vitrified pipe being specified for everything under 24 in., while for sizes 30, 36 and 42-in., alternate bids were received for clay and concrete pipe.

Another sewer job, in which vitrified clay pipe is specified throughout, is at Dinuba, Cal., where bids will be opened Jan. 28. Still another job is coming up at Redondo, Cal., where vitrified pipe will be used in sizes 4 to 24-in.

Samuel W. Smith, of the United Materials Company, handling the San Francisco business of the Los Angeles Pressed Brick Co., is still away from business on account of illness.

The largest architectural terra cotta contract let recently was for the Insurance Exchange building, at Lidesorff and California streets. The material will be furnished by Gladding, McBean & Co. the contract amounting to \$51,000. The floor tile contract for the same building has been taken by Mangrum & Otter at \$5,500.

R. H. Denny, of the Denny-Renon Clay & Coal Co., Seattle, Wash., has been spending considerable time in San Francisco of late, being accompanied by Mrs. Denny on a recent visit. He is actively following up the missionary work done here by his firm in the promotion of paving brick, and has hopes of establishing brick as a standard paving material in the cities around the Bay.

The Livermore Fire Brick Co., which has been increasing the variety of its products of late, has recently issued a handsome catalog showing all its products.

A company is being organized to erect a brick manufacturing plant at Elmira, Ore., by Messrs. McCutcheon and Hunter, of that place, J. W. Magers and B. Betlior, of Eugene, Ore.

The Home Industry League recently requested brick manufacturers of San Francisco and vicinity to submit samples of paving brick to the Board of Public Works, with the object of having California brick used in local street improvements. It is very doubtful whether any of the local concerns will be in a position to furnish such brick in any quantity at prices that can compete with outside firms, as experiments in the manufacture of paving brick around San Francisco Bay have not been notable for their success.

W. W. Wheatly, manager of the Long Beach, Cal., Brick Company, in addition to his other duties, conducts the publicity end of the business in an energetic manner. The daily press of that town is frequently supplied with well-written articles from his pen, setting forth the superiority of brick over all other building materials, and the stories received attention far beyond the "sphere of influence" of his own plant.

The Commercial Club of Las Vegas, N. M., is exerting its influence to put a stop to the manufacture and marketing of face brick made by convict labor in that state, the material having been offered at prices with which private firms cannot compete. The action was taken on complaint of the Las Vegas Brick Co.

The Red Hills Brick & Tile Co. has been incorporated at Los Angeles, with a capital stock of \$20,000, by J. F. Monro, E. C. Cline, M. H. Bailey, and B. Nelson. The company proposes to exploit the raw material in the red hills near Upland, in San Bernardino county.

P. A. Snapp, formerly of Denver, Colo., and N. J. Anderson of Coffeyville, Kas., are planning to install a brick plant at the head of Rose Canyon, near San Diego, Cal. Machinery has already been ordered for the first units, which will have a daily capacity of 40,000 brick.

William Overton, who has been manager of the brick yard of J. P. Wentworth at Albany, Ore., is making arrangements to install a tile plant at that place.

The brick plant of the Sacramento Clay Products Company, near Sacramento, Cal., is now operating three kilns, with about 30 men employed, and expects to start more kilns shortly. Sacramento has had a record year for building, and there is every prospect that the present activity will continue. The company has just completed deliveries on partition tile for the new addition to the Hotel Sacramento. The output of the plant consists entirely of partition tile and face brick.

OHIO.

Columbus, O., Jan. 12.—Many factories in Ohio have still retained their old methods of bookkeeping and they do not charge off to depreciation sufficient to cover that item on their ledgers. Thus they are deceiving themselves and are led to believe that their profits for the year are larger than they should be. The more progressive companies have adopted a rule of charging off \$1 per thousand to the depreciation account and this system is found to be the best for all concerned.

Brick manufacturers in Ohio do not believe that the new parcels post will aid them to any great extent in sending out samples. One of the reasons is the small weight limit fixed by the postoffice department for packages. The average weight of a brick is in the neighborhood of six pounds which would be mailable but manufacturers seldom confine their samples to one brick but more frequently send out three to six samples to the one person. Thus they will be compelled to rely upon express companies as in the past. If they had only one sample to send, the parcels post would be quite a benefit.

The Columbus Marble & Tile Company of Columbus has been reorganized and its name has been changed to the Columbus Marble Works Co. The reorganization adds another man to the board of directors and brings one of the foremost marble manufacturers of the country into the concern. E. Doddington is president; E. S. Dorgan, secretary and treasurer and Phillip McDonough, the new man in the concern is general manager. In addition to the officers the board of directors contains the names of Fred Schmidt and William Bott.

The Rossford Brick Co., of Rossford, Ohio has been incorporated with a capital stock of \$20,000 to manufac-

ture and deal in brick, tile and other clay products. The incorporators are Charles H. Hoffman, Jules J. Mathias, Eugene Rheinfrank, Carl J. Lindecker and A. M. Hoover.

WEST VIRGINIA.

New Cumberland, W. Va., January 9.—The sale of ground clay from Hancock county, W. Va., is a business that is being developed by the West Virginia Fire Clay Co., of New Cumberland, W. Va., which maintains its head offices in the Diamond National Bank Building, Pittsburgh, Pa. It is said that hundreds of thousands of tons of this product are used annually. The ground clay from the Hancock County fields is said to have been used more generously in the vicinity of the Panama Canal during the construction work there, than any other ground clay in the country.

The West Virginia ground clay business has been developed on a large scale by N. W. Ballantyne, president of the West Virginia Company. He is a native of Hancock county, and is reputed to know every foot and vein of clay in that section of the Upper Ohio Valley.

In shipping ground clay, sacks and barrels are used, there being about 100 pounds of clay in each container. It is claimed by this company that with the operation of through boats on the Ohio river between Pittsburgh, Memphis and New Orleans, the ground clay business of Hancock county, W. Va., will increase over 100 per cent.

Brick plants in the New Cumberland district during the last season experienced an unusual era of activity. There has not been an idle day during the year. Shipments were made direct from the kilns and even at this writing the stocks in the yards are claimed to be shorter than usual for this time of year.

A loss estimated at \$15,000 was sustained when fire started in the plant of the Standard Stone & Brick Co.'s plant at Georgetown, O., across the Ohio river from Wheeling a few weeks ago. Plans for rebuilding the plant are nearly completed.

The Lynchburg, Va., Brick Co. has obtained a charter, showing its capital stock at \$60,000. The president of the company is H. E. DeWitt, of Lynchburg, Va.

CANADA.

Smith Bros. of Edmonton recently closed with the American Clay Machinery Co. for an outfit of stiff mud brick machinery of 100,000 daily capacity, also a dryer, to be installed near Edmonton. Mr. Coombs and Mr. Smith are now in Bucyrus having a test made of their material.

A large reinforced concrete building, under construction, at Saskatoon, collapsed recently with great loss to the contractors. The building was up five stories, and either the frost or removing the supports too soon was the cause of the collapse.

The Brick Supplies Company, Ltd., Calgary, Alta., has just started up its new brick plant, located at Glenbow, Alberta, twenty miles west of Calgary. They have put in a full line of the American Clay Machinery Co.'s machinery, also a dryer. This plant is capable of turning out fifty thousand common brick per day.

The Pollard Bros., who installed a 60 Rotary clay dryer for preheating their clay, are now turning out a very superior quality of brick. They preheat their clay to 600 degrees Fahr., which they find is necessary to get the best results from their clay, and also to reduce cracking in drying. They will operate all winter.

E. J. Shaw, Western representative of the American Clay Machinery Co., Bucyrus, Ohio, just returned home from an extended trip up in Alberta, Saskatchewan and Manitoba, part of which time he spent in the hospital at Edmonton with an attack of pneumonia. He is able to be around the office again, but will be sometime before he will be himself again. He reports business up in the three provinces as the best he ever saw, and money plentiful. There is a freight congestion at Saskatchewan, Edmonton, Moose Jaw and Regina, and up to two weeks ago the railroad company would not receive any freight

for these points. Edmonton has granted permits for twelve million dollars' worth of improvement for 1913.

Mr. Newshaw, the C. W. Raymond representative, has been laid up for several weeks with a severe case of typhoid fever, but is reported better now.

M. P. Anderson of the P. Anderson Company, Edmonton, killed a large moose sixty miles north of Edmonton and also a large black tail deer. Mr. Anderson and Mr. Shaw of the American Clay Machinery Company made a large killing of ducks at Lake Mickelo in October.

The Pollard Bros. and P. Anderson Co. of Edmonton, will continue to run their brick plants all winter. Common brick are selling at \$14.00 per thousand in Edmonton and none to be had at these figures. Brick are selling at \$12.00 per thousand in Calgary.

Warren Overpack and associates at Medicine Hat, Alta., have purchased the Pursnal Brick Co.'s plant from Birnie Bros. and will greatly enlarge the output. Natural gas is used for burning.

CHICAGO.

Chicago, Ill., Jan. 11.—The year 1912 was considered normal as regards the total number of facing brick delivered. About 90,000,000 were used in Chicago and the nearby suburbs.

Owing mostly to weather conditions there was little business during the first three months, which threw the business of twelve months into the last nine months. The shortage of cars and also of some kinds of popular brick might have caused serious delays on many buildings had the work not been held back by the shortage of structural steel.

One thing that ought to interest and please all citizens who take pride in Chicago is the growing tendency of architects and owners to pay more attention to the physical appearance of warehouses and factories. Buildings of these classes are not so generally modeled after a packing box with holes in it. More attention is also being paid to the exposed portions of business blocks, residences, and apartments. These advances all help toward a city beautiful. Incidentally they also increase the use of facing brick and other fireproof materials.

Common brick, face brick, paving brick, sewer pipe and terra cotta manufacturers in the Chicago district are more than pleased with the returns of 1912 and all unanimously believe that the coming year will produce even far better results. While the brick trade at this time of the year has always been very quiet, there is considerably more activity than was expected and business at the present time is just about twice as heavy as twelve months ago. The amount of work in sight, this early in the season, has broken the record and this gives rise to the saying that 1913 will mark a new era, as far as the brickmaker is concerned.

One department of the clay industry now in its infancy, which promises to play a very important part in working out of artistic effects, is the use of brick for interior decorations. At the present time there are very few concerns working along these lines. The chief reason for this lies in the fact that architects have not as yet fully realized the adaptability of brick for this purpose.

The possibilities of brick for interior decoration, was plainly demonstrated in the reproduction of the main entrance of the Otis Elevator Building in New York City, in the last issue of "Brick and Clay Record."

Marble, the material used in most all large buildings, presents a cold, hard and barren appearance, while brick can be used in countless designs, each having a separate, individual color scheme. Brick for interior work presents a soft and warm effect, its harmonizing colors being very pleasing to the eye.

In view of the fact that prices during the past year have not been all that could be desired, Mr. Andressen, sales manager of the Chicago Fire Brick Co., says that the most important feature in the business for the coming year will be an advance in the price of clay products. This company operates two plants, the one at Brook, Ind., which makes fire-brick, has a daily capacity of four cars and the one at Mecca, Ind., which turns out sewer pipe

has a capacity of three cars. Both plants have been busy throughout the entire year and the amount of business transacted during the past year, far exceed that of any former year. This firm secured the contracts for furnishing the fireproofing material for twelve public schools in 1912. Strange as it may seem, with all the building going on in Chicago, at the present time, this company finds that it has more orders on hand from the country than from the city. They look toward the future in a very confidential manner and judging from the amount of work they have lined up for the coming months, 1913 will not fall below their expectations.

The Advance Terra Cotta Co., a new concern recently incorporated, is making great headway in the erection of its plant. The machinery will be installed in about two months and the plant will be placed in operation about the first of May.

The Wm. Dee & Co., which manufactures sewer pipe, came in for its share of the profits in 1912 and taking the outlook for the coming year into consideration, it finds its business in very favorable shape. This company has had a strenuous time in taking care of its orders and at one time in the fall it did not have a foot of sewer pipe in stock. At present it is operating three plants and thus far it has not succeeded in accumulating a stock of any size as orders have been coming in regularly, despite the fact that there is very little laying done at this time of the year. In a few weeks it will begin repair work at the plants, overhauling one at a time and keeping two in operation. The plants will be kept running all winter as the early spring demand is expected to be very large, in fact some of the eastern manufacturers say there will be a big shortage in this product.

NEW YORK.

New York, Jan. 10.—The entire eastern clay products interests are beginning to enthuse over the Clay Products Exposition, to be held in Chicago in the last week of February and the first week in March. R. C. Penfield, president of the Exposition Company, was in town this week and headed off his subscription list for space with \$200 from the New England Brick Co. He also arranged for a conference to be held next week with all the important New England clay products manufacturers and on the twenty-first of the month, when the annual meeting of the Greater New York Brick Co. is scheduled to take place here, he will present the matter before the Hudson river manufacturers.

Conferences are to be arranged with the East New Jersey manufacturers some time this month and later Mr. Penfield expects to visit Trenton and Philadelphia, with the idea of getting manufacturers there to send exhibits.

The Eastern Clay Commission this year will concentrate its efforts in getting manufacturers to send samples of their products to Chicago for joint exhibits. Of course, there will be many individual concerns which will want to show their products in a more extensive way and will probably subscribe for separate space, but an effort is being made to have a joint exhibition of the Hudson river products. Each subscribing manufacturer will be asked to send a small quantity of brick to the exposition, where it will be set up in an artistic display. The Raritan interests will be asked to do the same and from present indications the New England fellows will also be in line.

A feature of the clay products show this year will be a larger representation of the tile, mantel and grate interests. Ward B. Edwards, of Utica, editor and manager of the Tile, Mantel and Grate Monthly, a live wire in the trade, has been enlisted in the cause in a most important branch of the clay products business. He was in this city this week, and conferred with Mr. Penfield and other members of the commission and began a personal canvass of the distributing and manufacturing field here.

It is hoped that last year's subscription of a thousand dollars will be at least doubled this year. It has been suggested that the eastern interests combine to make a colossal display of their brick output in the form of a statistical object lesson. It could be made in the form of a huge pyramid, to represent the total annual output of brick in New York, New Jersey and Connecticut, veneered with eastern brick, which would rise in the very center of

the great exposition hall. This could be adorned with architectural terra cotta and its interior lined with hollow tile would form a reception room where the Eastern delegates could entertain their friends.

For the benefit of clay products interests who wish to communicate with the Eastern Clay Commission, offices on the eight floor of No. 103 Park avenue, New York city, have been established and contributions sent there will be acknowledged by Mr. S. H. Smart, Eastern secretary, or contributions may be sent direct to Mr. F. L. Hopley, 815 Chamber of Commerce Building, Chicago.

The Eastern Brick Situation.

Slowness in making steel deliveries is having a bad effect upon the call for building brick here. The consumption is said to be less than 40 per cent of what it should be at this time of the year, but weekly transactions at the wholesale docks show sales of comparative size with those of a corresponding week last year. This would seem to indicate that dealers are still stacking in anticipation of heavy demand later in the first quarter or else they are anticipating a scarcity of brick and are taking all they can handle at present prices.

Absolutely no quotation is being made on covered cargoes, which is another sign that the market is laying up supplies against a tight market later. All records for open navigation were broken this week when the Hudson and other brick carrying waters in this vicinity were still free from ice, permitting barge loads of brick to come down the river from as far north as Kingston. The latest date the Hudson river transportation companies have of open navigation on this stream is January 4. This means a continuation of brick arrivals in the market with a consequent drain upon the available supply up the river.

Complaint is being made that the quantity of common brick sold in this market last year by the Hudson river interests was only about 55 per cent of normal. Building statistics compiled by the various building bureaus of New York show the following comparisons of total building construction since 1896:

1912	\$208,256,793	1903	109,713,751
1911	174,764,688	1902	109,701,682
1910	126,268,533	1901	115,982,806
1909	191,901,731	1900	82,302,897
1908	100,978,187	1900	82,302,897
1907	167,561,333	1899	154,406,659
1906	196,411,871	1898	93,661,956
1905	140,358,504	1897	97,047,031
1904	146,041,583	1896	85,620,884

The question therefore arises: Where did the brick come from that supplied this record breaking volume of new building construction during the year just closed? Is the difference attributable to the volume of New Jersey brick that was used here or the quality of New England brick that entered the market? When the annual meeting of the Greater New York Brick Company takes place, it is expected that either the estimated percentage of consumption will be shown to have been placed too low, or that competition with so called foreign companies was greater than the average Hudson river producer imagined. It could be used as a persuasive argument to bring the independent and organized producers to a greater realization of the need of greater cooperation in selling in this market.

The Personal Side.

Senator and Mrs. John B. Rose, of Roseton, the Hon. and Mrs. George Washburn, of Kingston, and Mr. and Mrs. George Hutton, of Kingston, and Miss Elizabeth Washburn, of Haverstraw, sailed on Jan. 4th for a tour of the West Indies and Panama. Senator Rose is president and Messrs. Washburn and Hutton are directors of the Greater New York Brick Co.

Julien Washburn, Miss Louise Washburn and Miss Margaret Scott, of Haverstraw, Denton Fowler, Jr., and family of Fowler Lake, Mr. and Mrs. David Terry and Mrs. Albert Terry and Mrs. Edwin Terry, sail on the 16th for a tour of Mediterranean ports.

The Hon. W. W. Rider, a Hudson River brick manufacturer, sails on the 23rd for a tour of the West Indies and Panama.

Alonzo Rose, whose brick plant at Kingston is one of the most prominent ones in the North river district, died at his home on Monday, Jan. 6th, at the age of 73 years. He was

a director of the Greater New York Brick company and was a member of the Building Material Exchange of this city and a former member of the Mason Material Dealers' Association. Starting in as a young man in the brick business he built up a fortune and under the old system of handling brick in this city he was one of the foremost agents. The funeral, held at his home, No. 66 Clinton avenue, Kingston, on Thursday, Jan. 9th, was attended by many prominent brick manufacturers and the interment was at Wiltwick cemetery.

THE SOUTHWEST.

The clayworking industry in the Southwest has been exceptionally active in all branches and kindred lines. Many of the large plants have been overwhelmed with orders owing to magnitudinous urban expansion on one hand and the increased country demand. Due to the abundant crops at neverbefore prices, the farmers are surrounding themselves with the comforts of life, chief among which is a safe, sanitary and hygienic home which built of brick, carries out the idea to better advantage with any other material, the bungalow style superseding the old-fashioned types brought in with frame construction. Stock and utensils are also better housed in brick walls, as is also the farmer's latest model of pleasure conveyance—the automobile.

Many of the large factories have been complaining of the scarcity of hands, skilled and unskilled, the work being considered too common or strenuous by the average American workman, and to render the service more attractive, club rooms, baths and other conveniences have been installed at considerable expense to the manufacturers and are gratis to the workers.

The European plan of hospital and accident, insurance for the workmen at a nominal deduction from their wage, once introduced and made patent, might encourage labor to enter the clay working field.

While the by-product industry continues its encroachments and is gradually distending into a material market of its own products and resources, such as concrete in its various forms, briquettes and creosoted block for paving purposes, and metal construction ware, the volume of the brick business has experienced little setback, though many of ye olden time brick yards are disappearing from the surface contiguous to the larger markets which, however, is no stranger than the passing of the burr mills in our creeks and streams. The output of the big factories more than compensates for the loss of the minor factories unless one is worshipping land-marks.

The small yards are seeking new fields, and are springing up promiscuously throughout the southwest. True, their activities are largely confined to local demand and therefore yield but a fair measure of recompense and profit.

Cursory, rather than geologic surveys are responsible for the rumor that the tract known as Forest Park at St. Louis, was but a verdant cover over a rich deposit of potter's clay.

Advertises a brick maker: "My reputation is in the mud my brick and tile is made from." That is about as symbolic as when Campbell says, "Our reputation is in our tomato soup," providing we yield to the "slangular" portend of a stock phrase.

"I've never used printed stationery of any sort," a veteran rural competitor said, "My product sells itself, and my name is immaterial." He is a fortunate man, indeed. A kind fate pursues him even unto this late day. Asked whether he carried on any correspondence with the trade or users, he said, "Yes, mostly by postal card. The telephone isn't made for my ear." This may be all well in a single or isolated case, yet methinks printer's ink is the first and last principle of business when it comes to doing any sort of business with other than neighbors and as a rule the more printer's ink used the better business a man has.

THE NORTHWEST.

Minneapolis, Minn., Jan. 11.—The new season is showing every promise of developing more brick construction

than for a number of years. The work immediately in sight is still limited, but architects and owners are considering prospects for work which will be taken up soon, particularly if the weather is not too severe. Severe winter weather for a few weeks now would certainly defer considerable building which would otherwise be started soon.

There is every hope for a better demand for brick construction, particularly if the matter is given systematic attention. Heretofore there has been too little attention paid to educating people to use brick—the best material with the result that many who would have used brick have been diverted to other materials which have been more energetically exploited. The result is that many large structures have been erected of other materials when all concerned would have been much better satisfied, had brick been used. This is being realized more and more, and the brick manufacturers, agents and representatives handling brick in this territory are devoting more attention to the matter than ever before. It is rather unfortunate that there is not a larger representation of pressed brick plants throughout the Northwest. There are several first class concerns, each strong in itself, and devoted to caring for their own publicity in their own way. Were there more of them and smaller, they would be more inclined to pool issues and press their united interests more generally. This would mean a wider exploitation of clay wares than occurs under the present system.

The Minneapolis Builders' Exchange has elected a brick man for president, at the annual election just held, Edward H. Cobb, of the Hydraulic Press Brick Co., of Minneapolis. Mr. Cobb has been associated with the brick and building material lines of Minneapolis and the Northwest for many years, and has always been an aggressive and energetic man in the business. His selection as president of one of the largest and most aggressive builders' exchanges of the country is a promise that the organization will progress in the future along the same ambitious lines that have marked the past. Some of the things which this exchange has instituted may be mentioned. It has a labor bureau whereby its members may secure workmen in the different crafts, without having to apply to the headquarters of any of the unions. Records of the men's efficiency are kept and some 3,000 positions have been filled during the past ten months. This has resulted in furnishing work for men and workmen for employers, without charge to either and to the advantage of both. Another thing has been the installation of a credit department which is serving five different classes of material dealers, and has records on some 6,000 buyers, with exchange service for St. Paul and arrangements in view for covering outside buyers as well. These and other things will be elaborated upon during the coming year. And with Mr. Cobb's aggressiveness there is little doubt that the exchange will continue to flourish.

Maurice I. Flagg, a director in the Minnesota State Art Society, has devised a very desirable plan for the benefit of farm house improvement. It consists in securing desirable plans for farm houses, which shall be the outcome of a plan competition among Minnesota architects, for a \$3,500 house, this cost to cover the cost of materials, construction work, installation of heating plant, plumbing and wiring or piping for artificial lighting, but not the fixtures. The idea is to make plans for houses which shall serve to reduce the drudgery of farm home work. These plans are to be furnished to farmers for a small charge, with detailed specifications. Should this project get beyond the tentative stage, and into the stage of really forming a competition, the clay interests should take it up to see that there should be included in the plans, designs for clay dwellings, including complete fireproof and semi-fireproof structures. In many instances, particularly in the country, where labor is not so excessively high, the cost of a brick dwelling with hollow block partitions, could be built at close to the price of a frame structure with all its dangers of fire, vermin, deterioration, depreciation and the like.

The Red Wing Brick Co., of Red Wing, Minn., has started a series of tests of the clays found at Coon Creek, Minn., thirteen miles north of Minneapolis on the Mississippi river. The Hydraulic Press Brick Co. has a yard there, and its product is a very attractive one, which has

been used in a number of the more prominent buildings of the city. But the clay lands available are plentiful and there is room for a number of plants there. People of that city have great hopes that the Red Wing Co. will take hold and develop a plant there.

The Minneapolis Y. M. C. A. has started a course of lectures upon various materials, including brick masonry, terra cotta, etc. The course will cover the characteristics of the materials, both physical and chemical, relation to climatic exposure, architectural possibilities, and the like. The course will be of great value to those connected with architecture and building work.

LOUISVILLE, KY.

Louisville, Ky., January 10. — Kentucky clayworkers owe whatever business they have enjoyed during the past month to highly favorable weather conditions. Incidentally, it is evident from inspection of the field that the weather man is their debtor to a very material extent.

If the records of the City Building Inspector's office show that January, 1913, produced more building than did the corresponding month in 1912, as they certainly will, it will be because pleasant weather has allowed the owners, architects and contractors plenty of opportunities for rushing contemplated work into execution. Ordinarily the first month of the year is not a good building one in this territory, or in fact in any save the balmy climes of Florida or California, owing to the paralyzing grip which Old Boreas manages to gain on the situation. But it has been abnormally warm during the past month, and however badly this unseasonable condition may have affected mercantile lines, it has given builders the mid-winter chance of their lives.

Curtis A. Stout, for fifteen years sales and collection manager of the Hydraulic Brick Company, the biggest concern of its kind in Louisville, and one of the best-known men in the Kentucky brick trade, died a short time ago at his home, 842 South Sixth street, in Louisville. Mr. Stout was seventy-one years of age and had been identified with brick and brick construction interests for nearly half a century. Mr. Stout was the son of Macauley Stout, a pioneer brick manufacturer and contractor living in Portland, the earliest settlement of what is now the city of Louisville. Throughout his life he was prominently identified with brick and building.

No steps have yet been taken by the Hydraulic Brick Company, of this city, to wind up its affairs. The twin yards of the concern, capable of producing 100,000 brick per day, are on the market and although several deals for disposal of the property are pending, no definite steps have been taken. A committee of four members of the company's directorate has charge of its affairs, President A. J. Jungermann, of the Seelbach Hotel Company, being chairman of this body.

Antoine Dumesnil, for years president of the Hydraulic Brick Company and one of the best-known business men in Louisville, will leave shortly upon an extended Western tour. Mr. Dumesnil has retired from manufacturing business and devotes his time to the management of his extensive local interests.

The Kentucky Court of Appeals, at Frankfort, has refused to grant a new trial in the case of R. B. Bannon and others against M. J. Bannon. The members of the Bannon family are owners of the P. Bannon Sewer Pipe Co. and the Kentucky Vitified Brick Co., of Louisville, and the recent litigation concerns the ownership of stock in the two concerns. A new trial has been refused M. J. Bannon, who lost in the suit when it was appealed.

The Louisville Brick Co. is working full time in a very valiant fashion, considering the fact that the placid Ohio threatens to go on a rampage and overflow into the well-known West End company's clay pits any day. The watery waste of the Ohio is rapidly encroaching upon the Louisville's fields, but it is not believed that serious damage will be done. President Joseph Nevin, out of the wisdom of several conflicts with mid-winter floods, has provided an immense shed filled with clay in a protected position, so that even should the fields become a part of the Ohio temporarily the brick yard will not be seriously inconvenienced.

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ONE OF TORONTO'S NEWEST SKYSCRAPERS



From a recent photograph.

Those Members of the American Clayworking Fraternity, Who Were Fortunate Enough to be Toronto Guests, During the Recent Convention of the Canadian Clay Products' Manufacturers' Association, Were Agreeably Surprised at the Many Up-to-Date Business Buildings Which Abound in that Modern City. The Above Picture Shows the Canadian Pacific Railway Building, One of the Most Recent Structures in This Line, Which Consumed Large Quantities of Clay Products, Including Brick, Terra Cotta, Hollow Block and Encaustic Tiling. At the Right, May be Seen the Traders' Bank Building, a Modern 13-Story Building, Faced With Brick, With Terra Cotta Trimming.

CANADIANS ENGAGE SPECIAL TRAIN FOR CLAY SHOW

National Convention in Session at Toronto Decides to Send Big Delegation to Second Annual Exposition at Chicago—Arranges to Bring Highland Band and Bag Pipe Brigade—Holds Rousing Meeting

By A STAFF WRITER



ANADIAN clayworkers are coming to the Second Annual Clay Show in Chicago Feb. 28 on a special train and they will bring with them the famous Scotch Highlanders band to help enliven things. This was decided upon at the Seventh Annual Convention of the Canadian Clay Products Manufacturers' Association held in Toronto, Jan. 14-17.

Furthermore assurances were given that Canadian clay products will be ably represented among the "Exhibits of the Nations" in the foreign section and the people of the United States given an idea of what their cousins "over the line" are doing.

Outside of this action little else was done other than the discussion of production. Canadian clay manufacturers are worrying over how to make enough burned clay to supply the demand and this problem, unusual as it may seem to the average clayworker of the United States, was the chief one up for solution.

The wonderful development of the Dominion the past two or three years has brought about an era of building construction that few nations can boast of, and it is to the credit of the Canadians that they have decided that this construction work shall be permanent and fireproof.

Burned clay products have been chosen as the only material to use and the building statistics of 1912 show that little else was used.

Unprepared for the great demand, the clay manufacturers have had their capacity taxed to the limit and despite the activity in plant construction they have been unable to anywhere near supply enough brick, hollow tile and terra cotta.

"How Shall We Meet the Situation," was the keynote of the convention and practically the entire programme of the

four days' session was devoted to discussion of the manufacturing end.

The Association went on record as indorsing the movement to encourage the installation of new plants and increase the capacity of those already installed. The members felt there was room enough for all and declared that this was the only solution to the problem that confronted the Canadian clayworkers.

One of the largest attendances in the history of the Association was registered on the opening day. W. H. Freeborn, of Brantford, occupied the chair when the convention was called to order and continued to wield the gavel until the closing session, when his successor, Charles A. Millar, of Toronto, relieved him of his duties.

Each of the four days' session was devoted to the reading of papers and their discussions, but time was found to make several excursions about the city and neighboring territory. One of these trips was to Milton, where the plant of the Milton Pressed Brick Co., was inspected. J. S. McCannell, president and general manager of the company, extended the invitation to the visitors and chartered a special train to take his guests to

Milton, where all were royally entertained by the members of the firm.

The Milton plant is said to be the largest exclusive dry pressed brick plant in the world, and has an annual output of 30,000,000 brick. However true this may be, there is no question but what it deserves the blue ribbon for being one of the model plants and easily will carry away the honors when it comes to cleanliness.

The visitors remarked on the absence of dirt even in the machine room and the crushing department. The engine



Badge and Clay Pipes, Souvenirs Given Out at Canadian Convention.

room particularly was noticeable for its neatness and looked as if a New England housewife had been placed in charge.

The greater part of the forenoon of one day was spent in inspecting the Milton plant and lunch was served by President McCannell in the power plant, the visitors enjoying the novelty of dining under the unusual conditions.



C. H. Millar, Newly-Elected President Can. Assn.

Other plants were visited during the session in and around Toronto, and the clayworkers, particularly the contingent from the United States, were impressed with the progressiveness of the owners.

Among the papers read in the business sessions was one by George Raymond, of the C. W. Raymond Co. He was the only speaker on the programme from the United States, and chose as his subject, "A Talk on Kilns." This paper brought forth considerable discussion. It is printed in full in another section of this issue.

The formal welcome of the visitors was made in addresses by Mayor Hocken, of Toronto, and Charles Millar, also of Toronto, who spoke in behalf of the entertainment committee. President Freeborn responded. The annual address of the president followed and the report of Secretary and Treasurer McKinnon was read. President Freeborn's address was, in part, as follows:

I am delighted to see so many representatives of both brick and tile industries from all parts of the Dominion present on this occasion. No doubt you have come here with a double object in view. First, to meet old friends and acquaintances, or, as a noted American once said, "To see old faces whom you hadn't shaken hands with for a long, long time." Secondly, for educational advantages. In order to effect these purposes we must shake off all restraint and conventionalities and selfishness. Let the spirit of fraternity prevail among you and may there be a desire to ask yourself this question, "How much does the success of this convention depend upon my individual effort?" If this suggestion is acted upon, success is assured. I trust that everything which may be said or done may be beneficial and conducive of much good to every clayworker present today.

It affords me equal pleasure to welcome to our convention our kinsmen from across the border, representatives in many ways of the various clay industries, and, at this juncture, in the name of this association, we extend to you a hearty welcome. We are glad to have you amongst us, and as you have come from a distance with specific objects in view, I can see no reason why your expectations should not be realized. We desire a mutual

exchange of thoughts and ideas with you, from which we may receive suggestions that may be applied to our own condition to our betterment as clayworkers.

In spite of the unfavorable weather the year 1912 was a very prosperous and progressive one. More new citizens came to our shores than ever before, and, as a result, building operations reached figures that are astonishing, and in a score of other ways that are just as vital to a new and growing country, this expansion went on taking actual form and substance. Nineteen hundred and twelve was an important year for Canada and, for actual accomplishment of big undertakings, it stands out from among its predecessors. We would be pessimists indeed, if, taking retrospect at the close of the old year and having entered upon the new year, we failed to take proper pride in our land. The trend of business during the coming year is a subject that occupies the attention of every thoughtful business man. Will there be a lessening of activity and a more conservative tone to business sentiment? If we may be allowed to give a forecast as to what the future holds in store, particularly regarding building operations, judging from the condition of the money market, the reports of banks, and real estate, we are of the opinion that we have entered upon one of the greatest business years for brick and tile makers in the history of this country.

Importance of Clay Industry.

The brick and tile business, now grown to be one of the largest industries in Canada, is playing its part in its upbuilding, and the once despised and looked-down-upon brickmaker is now in great demand by the general public. The rapid growth and settlement of this country has created a demand for building material to meet the wants of the people.

Nature has provided boundless resources and facilities for a dense population within our borders by the fertility of her soil. The abundance of clay and large deposits of coal, which are now being developed in our great northwest, is apparent to all, requiring only the energy and genius of the clayworker to meet the requirements of a fast growing population.

In passing, a word to those already established in the brick and tile trade: Are we devoting our energies and



W. H. Freehorn, Ex-President Canadian Association.

the output of our yards to one line of business only, all trying to produce cheaper brick and outdo our neighbor in placing them on the market at a lower price than our competitor? If such is the case, there can only be one ending to a course of this kind being pursued, namely, loss of capital invested, loss of prestige on account of inferior product, and ultimately forced out of business by our loose methods.

We do not purpose to refer to the standardization of

THIS IS THE LARGEST PLANT OF ITS KIND IN THE WORLD



The above pictures are of the works of the Milton Pressed Brick Co., of Toronto, Canada, said to be the largest pressed brick plant in the world. It has an annual output of more than 30,000,000 and its president and general manager, J. S. McCannell, whose picture is shown above, is looked upon as one of the most progressive business men in Canada. The machinery at the plant consists of eight 4-mold Boyd special presses and an equal number of Eagle dry pans. The barrows and trucks are of the H. E. Hunt Co., manufacture, this concern being a Toronto Institution.

Mr. McCannell is a firm believer in publicity work and conducts a systematic advertising campaign in Toronto papers and other publications of the Dominion. In addition to this he gets out a set of most excellent pamphlets which he distributes to a large mailing list.

brick, nor to its color; there are problems which must be worked out by the producer to suit the conditions of the locality in which he may be engaged in business. But we do believe in placing our industries on a higher plane from time to time by developing new machinery, modern kilns for burning, a greater percentage of facing brick, well appointed plants, systematism in our business relationship with the public, advertising our products in every legitimate way, and, above all, giving personal attention to every detail of business which may crop up from time to time.

In a word let us aim to offer to the people a first-class brick or tile, and they will appreciate it by giving us their preference and patronage, leaving prices to adjust themselves, which they certainly would do as a natural sequence.

I crave for the same kindness and consideration for my successor in office, which you have given me, and trust that the year 1913 may be the best in the upbuilding of the association.

Berg Mchy. Co. Gives Theatre Party.

On the evening of the first day's session a theater party was given by the Berg Machinery Manufacturing Co., an added feature to the program being the display of the moving pictures boosting the Clay Show and clay products in general, which were loaned by the publicity department of the Exposition Company, of Chicago.

The second day's session was devoted chiefly to the discussion of the following subjects: "Mining of Clay," "The Care of Machinery and the Power Plant," "Drier Problems,"

"Setting Brick," "Tile Publicity" and "Credits and Book-keeping."

Enjoyable Banquet Given.

In the evening of the second day the annual banquet was held in the banquet room of the Prince George Hotel. A

struction and burning was discussed and in the afternoon automobile trips were taken over the city. In the evening, a smoker was given at which a special programme was rendered, several very interesting lantern slides being exhibited, showing some recent Canadian brick construction work.



Special Train Chartered by J. S. McCannell, which Conveyed the Members of the Canadian Convention to the Plant of the Milton Pressed Brick Co.



Lunch Was Served to the Guests in the Power Plant at the Milton Works.

concert program was rendered by artists of note and a number of entertainers added to the interest and enjoyment of the visitors. There were several speakers on the programme, Prof. W. H. Day, of the Ontario Agricultural College, making a very interesting talk on the tile industry of the Dominion.

Thursday morning, the third day, the question of kiln con-

It was suggested that the establishment of a ceramic department in some Canadian university would be a benefit to the industry.

In keeping with this timely suggestion, an offer made by the C. W. Raymond Co., of Dayton, Ohio, came in at a most opportune moment. The Raymond company offered to give a complete laboratory equipment to the proposed ceramic department of the Toronto University.



Visiting Clayworkers in Front of the Office of the Milton (Ont.) Pressed Brick Co. Prominent in the group are: 1, C. A. Bloomfield, President M. B. M. A.—U. S. 2, W. H. Freeborn, Ex-President Canadian Association. 3, D. O. McKinnon Ex-Secretary Canadian Association. 4, J. R. Walsh, Newly Elected Secretary Canadian Association. 5, C. A. Millar, Newly Elected President Canadian Association. 6, Geo. Alsip, Alsip Brick & Tile Co., Fort William, Ont. 7, J. Keele, Clay Analyst, Now Doing Special Work for University of Ontario. 8, D. A. Lochrie, One of the Canadian "Live Wires."

the equipment to be composed of one five foot grinding pan, with both screening and solid plates of a type known as the Grog Pan; one No. 3 Daytonian Brick Machine, with one die; one No. 1 Hand Repress, with one die; one hand Rotary Cutting Table, with one set of platens. This will be shipped to any university of good standing whose request is approved by the Canadian Clay Products Association.

On the morning of Friday, the last day of the session, the visitors were entertained at the Strand Theater with some interesting views on old-time and modern brick construction. In the afternoon, at the closing session, the annual election of officers was held. C. A. Millar, of Toronto, was chosen president; David Martin, first vice-president; George Crain, second vice-president; G. W. Moodie, third vice-president, and J. R. Walsh, of Toronto, secretary and treasurer.



IOWA LAUNCHES DISTRICT UNIT SYSTEM

By A STAFF WRITER



FOLLOWING the initiative taken by the Illinois Clay Manufacturers Association at Champaign, Ill., recently, the Iowa Brick and Tile Association organized and launched district associations throughout the state at its annual convention in Des Moines Jan. 22 and 23.

In the wake of this important movement, plans were laid for broadening the work of the state association and at a meeting to be called later in the year it is proposed to reorganize the parent body along the lines suggested.

Practically the entire two-days' session of the convention were devoted to the discussion of publicity and trade relations and the program was in striking contrast to the program of the average state convention in that few papers were read and little or no attention paid to the manufacturing end.

"How to Sell What We Can Make" seemed to be the keynote of the convention and the members went about solving the problem with a directness that was admirable.

In furtherance of the proposed campaigns to be conducted during 1913 the convention decided to increase the annual dues of the Association from \$1 to \$10, thus assuring a fairly good fund for incidental expenses.

As the first step in this proposed reorganization the name of the organization was changed to that of the Iowa Clay Products Manufacturers' Association.

The money obtained from this source, however, is not to be applied to general publicity work, the district associations taking it upon themselves to raise funds from among their members to carry on whatever it may be decided to do in their particular territory.

One district association, alone, is said to be considering the creation of a fund of \$10,000, every cent of which is to be devoted to the distribution of convincing literature and the insertion of advertisements in the local papers.

The organization of the district associations took place

at night sessions, and practically every clayworker in attendance at the convention gave his support to the movement.

Separate meetings of the various branches were held. The manufacturers of large drain tile held one meeting and formed an association along the lines best suited to their purposes. The manufacturers of small drain tile did likewise as did the manufacturers of hollow block, brick and other clay products.

There seemed to be absolute unity of purpose in these meetings, and, while there were some differences as to the encroachment of territory, these were easily settled.

The convention was called to order Wednesday morning at 10 o'clock by Secretary C. B. Platt, G. M. Fairchild of Sioux City, the president, being unable to be present. W. U. Turpin of the Lehigh Sewer Pipe and Tile Company, acted as chairman during Mr. Turpin's absence, and made a most excellent presiding officer.

Governor George W. Clarke inaugurated a few days prior, honored the association by delivering his first public address as governor before the

body. On behalf of the city and State he welcomed the clayworkers to Des Moines, and spoke so highly of burned clay and the industry in Iowa, that his remarks would make good campaign literature for the Association.

Governor Clarke said few realized the importance of the clay industry to Iowa, and he himself was somewhat surprised that more than half of the capital invested in the State's industries, was tied up in the manufacture of clay products.

Following Governor Clarke's address, Acting President Turpin responded on behalf of the convention, and the morning session was brought to a close.

The afternoon session was devoted entirely to publicity work. Two papers were read—one by Secretary Platt, who chose as his subject, "Making of Costs," and the

WHAT THE IOWA STATE CONVENTION DID AT DES MOINES.

IT FORMED DISTRICT ORGANIZATIONS in the various branches of the industry for publicity work and the betterment of trade conditions.

IT MAPPED OUT the details for a reorganization of the association along broader lines, particularly in publicity work, the same to be launched at a special meeting to be called later in the year.

IT RAISED THE DUES from \$1 a year to \$10 for the purpose of creating a larger fund for defraying the expenses of an active campaign during 1913.

IT VOTED TO PAY the secretary a stated salary and thus went on record as the first of the state organizations to take such a step.

IT ELECTED OFFICERS, naming H. R. Straight, of Adel, Iowa, president, and re-electing C. B. Platt, of Van Meter, Iowa, secretary.

other by Iverson C. Wells, managing editor of "Brick and Clay Record," who spoke on local and district association work.

Mr. Platt went deeply into the subject of manufacture and, after discussing the various problems that came up in the clay plant, took the stand that more attention must be paid to the selling end. His paper is printed in full in this issue and should be read by every clayworker.

Nation-Wide Publicity Urged.

Editor Wells held that the hope of the clay product industry was in a Nation-wide publicity movement, as by this means only could the manufacturer of burned clay expect to create a demand for his wares in face of the active competition of concrete and lumber.

Local and district publicity work was urged as the first step to take and the individual clay manufacturers were asked to form associations for the purpose of keeping in closer touch with each other and planning campaigns to combat competition in their respective territories. These associations, of course, were to be under the direction of the State association, which would act as a clearing house for the smaller organizations.

Both papers were discussed at length and several suggestions made. No action was taken at the afternoon session, however, as it was thought best to permit the members to have more time for deliberation.

In the evening, the various interests were brought together and, after sessions that lasted in some cases long after midnight, the district association movement was launched.

Thursday, the last day of the session, was devoted to technical papers, the election of officers and other business.

The question of the State association making an exhibit at the Second Annual Clay Show in Chicago, came up for discussion at the morning session. Mr. Simpson, as an able representative of the Exposition company, opening the discussion by telling the convention of the many advantages from a publicity standpoint that such an exhibit would bring.

There was considerable discussion but the members seemed to feel that the time was too short to make a creditable showing. It was shown, however, that Iowa probably would have more individual exhibits than any one state and that it would not suffer, despite the fact that the Association took no action as a body.

There was a disposition among many of the members, however, to send small displays, and these may be gathered in one lot and placed in a booth.

At the afternoon session papers were read by Anton Vogt, of Peru, Kan., on "Burning," by C. B. Platt, of Van Meter, Ia., on "The Manufacture of Brick" and addresses by Prof. S. W. Beyer of Ames College and G. A. Wrightman, secretary of the Iowa Manufacturers Association. Mr. Vogt's paper will be printed in the "Kiln and Burning Department" of a subsequent issue. The paper by Mr. Platt was a most valuable one and will be printed in full in a subsequent issue.

Prof. Beyer told of the work that is being done at the State college and suggested a short course in brick and tile work and an extension department for the industry, under the supervision of the engineering department of the Iowa State college at Ames. He announced that such work is being contemplated by the engineering department of the college and the propositions have been approved by the board of education. He urged the brick and tile manufacturers to co-operate with the state college in securing the short course and extension department.

Mr. Wrightman spoke briefly on the proposed employ-

ers' liability legislation in Iowa and urged the clay manufacturers of the state to join his association in seeing that this legislation shall be so framed as to preserve the best interests of the manufacturers.

In the election of officers held, H. R. Straight, of Adel, was chosen to succeed the retiring president, G. M. Fairchild, of Sioux City. Mr. Straight was treasurer of the association during the past year and proved a most efficient and progressive officer. W. U. Turpin, of Ft. Dodge, was chosen as vice president to succeed Judge J. L. Stevens, of Boone. Robert Goodwin, of the Goodwin Brick & Tile Co., of Des Moines, was elected treasurer to succeed Mr. Straight, and Secretary C. B. Platt, of Van Meter, who has served the association so ably, was prevailed upon to again guide the destinies of the organization, despite the fact that he felt the duties had increased to such an extent that he felt he must either neglect his own business or that of the association.

Mr. Platt has been a most aggressive worker and the association, feeling that the success, so far achieved, was through his efforts, urged him to remain at least another year in active control. To lessen some of the detail work, the convention voted \$400 for the employment of an assistant.

There were 149 members in good standing when the convention closed Thursday afternoon, to meet next year at Des Moines again. This, however, does not include the list of non-attending members who, in all probability, will pay their dues later.

MEETING OF WESTERN ONT. CLAYWORKERS.

Plans Made for Interesting Meeting at Windsor, Ont., February 12-13.

A building exhibition in connection with the regular sessions of the convention will be one of the attractive features of the meeting of the Western Ontario Clayworkers' Association, which will be held in the rooms of the Builders and Contractors Exchange in the Thompson Building, Windsor, Ont., Feb. 12-13, 1913. Rooms for the delegates have been arranged for at the International Hotel.

The executive committee has arranged for an exhibit of clay products in the Armory, in conjunction with the big Corn Exhibit, which will be held on the same dates. Every member is expected to bring samples of his wares, and in return for floor space, the clay men will offer special prizes for different varieties of corn. The presence of such a large number of farmers at the Corn Show will make it an auspicious time for the display of clay products, such as brick, hollow block, tile, etc.

Among the important things which will be up for consideration at the convention will be the revising of the constitution and by-laws of the association, copies of which will be forwarded to the Department of Mines.

The tentative program, as arranged by Secretary Alfred Wehlann, follows:

Program.

1. The advantages of some styles of tile machines over others, and hints on steam piping for live and condensed steam. Mr. J. Messacar, a mechanical expert, will treat on this subject.
2. Drying of clay goods with exhaust steam, and a discussion of the minor points in handling, drain tile, care of tools, etc. J. Miner.
3. Talk on Grant kiln; also on handling tile by overhead system from machine to dryer, thence to kiln. W. McCredie.
4. Draining clay pit with gasoline pump and maintenance; also, remarks on kilns. J. Carr.

5. Side cut brick versus end cut, by A. W. Hill.
6. The construction of frostproof houses with burnt clay ware. B. Broadwell.
7. Publicity. August Wehlann.

In the announcement sent out by Secretary Wehlann the following appeal was made:

There is one matter which I would like to bring to the attention, especially of members, that out of a possible 85 manufacturers on my list we have a membership of only 22. While the membership has grown from 6 men in 1904 to 22 in 1912, it seems to me that if the executive committee and private members had done as they should, we would now have a membership roll of at least 75 men.

Then, too, there has been some little friction between the Canadian Clay Product Manufacturers and our W. O. C. W., which should never have been. I feel that the W. O. C. W. A. should have an official delegate at the convention of the C. C. P. M. A. showing our hearty support. Believe me, we can never do any big things if we do not pull together



Alfred Wehlann, Secretary Western Ontario Clay Workers Association.

We want a school of ceramics and have taken the matter up with the Ontario Legislature. But we must show force or we never can have the school.

Let us get together and show a little more "go" in our makeup. Those who are up and doing are the ones who accomplish their aims. Urge upon your neighbor clayworker the necessity of affiliating with one or the other of the associations, or better still, both.

EMPLOYERS' LIABILITY LAW DISCUSSED.

Important Topic Given Considerable Attention by Ohio Face Brick Men.

The principal topic of discussion at the annual meeting of the Ohio Face Brick Manufacturers' Association, which was held at the Southern Hotel, Columbus, Ohio, January 22, was the employers' liability. Member Yapple of the Ohio State Board of Awards explained at length the workings of the state law for employes' compensation and showed the deficiency of the present law. He urged the passage of a law making it compulsory for the employer to take out state insurance under the board of awards.

A well known liability insurance man was present and gave a most interesting talk, in which he said the present method of conducting business by liability insurance companies was illegal and should be changed. He also was

favorable to the plan of having compulsory liability insurance, but believed that liability companies should compete with the state in this matter. The question of compensation for injured employes is an important one and the face brick manufacturers of the state have given it considerable thought.

The annual election of officers resulted as follows: President, W. D. Richardson, of the Ohio Mining & Manufacturing Co., Shawnee; vice-president, H. S. Everhard, of the Everhard Co., Massillon; secretary, R. L. Queisser, of the Queisser & Bliss Co., Cleveland; and treasurer, L. G. Kilbourne, of the Columbus Brick & Terra Cotta Co., Columbus. Mr. Richardson succeeds as president C. H. Chapin of the Hydraulic Press-Brick Co., Cleveland.

GREATEST EVENT IN CLAY WORLD.

Advance Reports Indicate Largest Attendance at Conventions in History of the Industry.

Advices from all over the country give assurance that the attendance at the annual convention of the National Brick Manufacturers' Association which will be held again in Chicago during the Clay Show, from March 3-8, will be the greatest in the history of the organization.

The same optimistic reports have been received from the National Paving Brick Manufacturers' Association, the Building Brick Association of America, the Western Paving Brick Association and all the other national bodies that will hold their annual meetings in this city during the Clay Show.

With all these conventions in session, together with the adjourned meetings of the various state organizations which will be held in Chicago during the same period, there is expected the greatest gathering of clay product manufacturers in the history of the industry.

An unusual effort has been made to arrange entertainment for the visitors and the special committee from the Chicago Clay Club, which has these matters in charge, promises a "live" time every hour of the day and every day during the Clay Show.

One of the special features during the convention period will be the launching of a new fraternal organization of clayworkers, something similar to the "Order of Hoo Hoos" among the lumber men. This organization will be made a permanent one and there will not be a serious motive in its entire organization.

Social Organization to be Formed.

Those who have suggested the lodge or fraternal society have done so with the idea of furnishing amusement and entertainment for the visiting clayworkers at the coming convention and all others that are to follow.

Visiting convention members usually are left to seek their own amusements and many, owing to their lack of acquaintance in a large city, fail to be entertained.

It is proposed to launch the new organization with the initiation of candidates into the mysteries of the order. It is likely these initiations will cover two or three evenings, and it is safe to say that more amusement will be bottled up and let loose during the two hours of work than is possible under any other conditions.

The regular floor work, while enough to satisfy the most exacting, will be followed by a supper and a cabaret show or some other form of entertainment.

The membership and initiation fees probably will be no more than \$1—which it must be admitted will be a very modest sum for the amount of entertainment to be had.

The lodge will be launched with a full complement of secret signs, grips and other mysterious symbols, and it is said that the ritual will tell the story of burned clay as it was known to the ancient Egyptians.

The preliminary organization work is now under way and the sponsors for the lodge are very secretive about their plans. It is barely possible that the brief outline given above will not be followed, although it is said to be the tentative plan. Whatever the sponsors decide to do, however, it is safe to say that the new lodge will be brimful of good, wholesome entertainment and that there is no clay manufacturer who cannot become a member and enter into the fun of the thing without hurting his conscience.

In addition to the new order that is to be launched, the entertainment committee has made elaborate plans for sightseeing trips over the city and suburbs, for which free automobile service will be supplied, and other forms of entertainment, so that everyone will be able to have a good time no matter what the trend of his enjoyment may be.

"Brick and Clay Record" hopes to be able to print a detailed account in the Feb. 15 issue of the entertainment plans, practically the entire edition being devoted to advance news of the Clay Show and the various conventions.

FACE BRICK MEN MEET.

Many Important Matters Affecting the Trade Discussed at Big Pittsburgh Meeting.

There was a large gathering of manufacturers of face brick at Pittsburgh January 17, to participate in the meeting of the board of directors of the American Face Brick Association which was held at that place. The meeting was called to order for the purpose of outlining the work to be done by the association during the present year. Of the members of the board of directors, the following were present: President J. M. Adams, secretary and general manager of the Ironclay Brick Co., Columbus; H. R. Beegle, secretary and treasurer, Beaver Clay Manufacturing Co., New Galilee, Pa.; J. H. Black, general manager the Jewettville Brick Co., Buffalo; E. C. Clark, sales manager Kittanning Brick & Fire Clay Co., Pittsburgh; W. H. Hoagland, secretary and general manager the Clay Craft Brick Co., Columbus; H. W. Holmes, general manager the Puritan Brick Co., Detroit; L. G. Kilbourne, president the Columbus Brick & Terra Cotta Co., Columbus, O.; W. J. Snyder, secretary and treasurer the Brazil Clay Co., Brazil, Ind.

A number of questions were discussed, among which were the equalization of freight rates, fire insurance, working out a cost system, and raising the standard of face brick jobbers. It was suggested that an effective cost system should be formulated and all of the manufacturers in that line of business urged to adopt it. It was stated that many manufacturers have no idea of the cost of their products and this leads to selling their output at a figure below cost. Many of the concerns have no adequate system of charging off depreciation on their plant and machinery or of taking into account their depleted supply of clay and coal.

Equalization of freight rates will be one of the important matters to be taken up. The association is opposed to the high rates arbitrarily imposed by short line railroads which refuse to pro-rate with other roads in fixing freight rates.

It is claimed that a number of the jobbers of brick and in fact all kinds of clay products are in the habit of show-

ing a first quality sample and shipping to the purchaser a second quality product. The association will try to bring these dishonest and irresponsible jobbers to time.

To bring about these reforms, it was decided to establish a bureau, with a manager and sufficient clerks and office help to carry out the ideas. A competent brick man will be placed in charge and steps will be taken to begin the work in the near future.

Another matter taken up was the question of asking the postoffice department to increase the weight of parcel post packages. The present limit of 11 pounds is not sufficient to mail two brick together as samples so that under the present weight limit the new parcel post is of very little use to brick manufacturers.

CERAMIC SOCIETY MEETS AT WASHINGTON.

Capital City Selected on Account of Many Research Laboratories Located There.

After careful consideration, the American Ceramic Society has decided to hold its fourteenth annual meeting in Washington, D. C., this year. The meeting will begin on Tuesday, February 25, and close Thursday, February 27, or Friday, February 28. The hotel headquarters has not yet been decided upon, but owing to the crowds likely to be in the Capital during the last week of the present congress, and in preparation for the inaugural on March 4, it is highly important that reservations be made promptly. While the program has not been entirely completed, it is expected that from sixty to eighty papers will be read. The following have been nominated by the nominating committee: For president, Ellis Lovejoy, Columbus, O.; vice-president, Adolph Hottinger, Chicago, Ill.; secretary, Edward Orton, Jr., Columbus, O.; treasurer, Herford Hope, New Brighton Pa.; trustee for 1913-16, F. W. Walker, Beaver Falls, Pa.

While Washington is not a manufacturing center, and has no clay works of importance within or adjacent to its borders, it has, nevertheless, more laboratories in which research work of interest to members is being prosecuted than any other point. The Bureau of Standards, the Bureau of Mines, the U. S. Geological Survey, the Geo-Physical Laboratory of the Carnegie Institute, the Smithsonian Institution, the Road Material Laboratory are some of these. If arrangements can be made, it is the intention to spend one-half of two days or perhaps one whole day in excursions to the laboratories. It is possible that sessions of the society may be held at one

NORTHWESTERN ASS'N MEETS NEXT MONTH.

Interesting Session at Minneapolis Anticipated—Good Speakers Engaged.

February 11 is the date selected by the Northwestern Clay Association for its annual convention this year, which will be held at Minneapolis. No program has been published so far, but Secretary Axel Anderson gives assurance of an interesting session, and has arranged for a number of most entertaining as well as instructive papers from authoritative speakers.

It is more than likely the association will consider also the proposition to bring a state exhibit to the Chicago Clay Show. The question, at least, is to be brought up for discussion during the convention and early advices from various sections of the state indicate that the idea meets with the approval of a great many of the members.

Secretary Anderson's address is 3145 Calhoun Boulevard, Minneapolis, Minn.

GREATEST SHOWING OF CLAY PRODUCTS

Recent Developments Prove Conclusively that 1913 Show Will be Most Complete and Creditable Display of Clay Products World Has Ever Seen

By A STAFF WRITER



THE Clay Products Exposition of 1913 is developing into what promises to be the most complete and creditable showing of clay products the world has ever seen. Those persons who saw the 1912 show were confident that it could not be surpassed, but the advance indications point conclusively to a much superior exposition, opening February 26th next.

The various departments of the exposition will be more evenly balanced and there will be some branches of the clay industry represented which were noticeable last year by their absence.

The encaustic tile people will have a showing that will be a credit to that branch of the industry, while the pottery trade will also be represented in some of the most beautiful and attractive exhibits in the show.

The Art Institute of Chicago has entered into the spirit of the new exposition in a very gratifying way and a class of clay modelers from the Institute will give daily exhibitions in clay modeling. This calls for deftness of hand to carry out the dictation of the brain and the artistic creations of this class will be a revelation to many, and the actual process of producing the finished models will be interesting in the extreme.

The Bureau of Standards of the United States has seen the importance of this exposition and will put in a display showing the superiority of clay products for various purposes. This will apply both to the road building branch of the industry and the building construction branch. The road material branch will show the im-

perviousness and the wear resisting qualities of paving brick. Samples of streets taken up in different cities will be shown to prove that good brick streets cannot be worn out. These samples will have seen the wear of a dozen to twenty years on busy thoroughfares in different cities and will be conclusive evidence of the superiority of paving brick for road building purposes.

The Bureau of Standards will also demonstrate the structural strength of clay products and the fire resisting qualities of these products. Both of these points are very important in building construction.

Representative Display of Face Brick.

The face brick interests will be well taken care of and the display of face brick, together with the method of using same, will be a revelation in the building art. The showing of face brick will be one which should be studied by every architect, contractor and builder, as well as every mason who has any desire to progress in his trade, and the helpful influence of this display alone will be felt from coast to coast.

The common brick interests will also be strongly in evidence, while the sewer pipe branch will give some interesting demonstrations of the use of vitrified clay pipe.

This branch of the 1912 exposition furnished one of the instructive displays in the Coliseum and the public is naturally looking towards the sewer pipe interests to make an equally gratifying display in the new exposition.

In roofing tile there will be a creditable showing and, as the fire-proof roof, which is best attained by the use



Splendid Showing of Faience at 1912 Exposition, Shown by the Hartford Faience Co., Hartford, Conn.

of clay roofing tile, is a most important feature of construction, this display should prove interesting to the visitor as well as profitable to the exhibitor.

The terra cotta manufacturers will this year combine on a display, which will contain much of beauty, merit and interest.

Paving Display Will Attract Attention.

The paving brick manufacturers will also have a strong showing of paving brick and several individual manufacturers of improved lug brick and block will make a showing that will prove of great interest to city engineers, contractors and others who use paving material.

The stoneware exhibit in this exposition will reflect credit upon those wide awake manufacturers who are putting on a display which cannot but prove profitable to them.

Another interesting feature of the exposition will be the manufacture of pottery, which will be shown daily



Display of Oriental Brick Shown Last Year by C. E. Poston Attica, Ind.

during the exposition. Few people appreciate how a piece of pottery is made and there is no doubt of the popularity of this portion of the show.

The drain tile interests will not be absent, as the manufacturers of that standard article last year profited largely from their display and will be back again for more business.

There are many novel features connected with the clay industry which have not been lost sight of and many of these will be conspicuous in the exposition.

The house to be built this year in the Coliseum will be of the utility type and will be especially designed for the laboring man who cannot build an expensive home, but who is entitled to the protection and permanence which fire-proof construction gives him. This house will be given away at the exposition and rebuilt on some lot in Chicago.

There are numerous other features of the show which will interest both the clay product manufacturer and the visitor.

Those manufacturers who have not yet taken space for the exposition will be missing an excellent opportunity to secure business if they do not come in at once. The cost of a display is very reasonable in comparison with the results that can be secured.

URGES NATIONAL PUBLICITY WORK.

R. C. Penfield, President of the Clay Products Exposition, Advocates New Organization to Boost Burned Clay.

A national organization for the purpose of boosting clay products was proposed at a recent meeting of the board of directors of the Clay Products Exposition Convention of which mention was made in these columns in the Jan. 15 issue. President Penfield supplements this announcement by a letter which he has addressed to the clay manufacturers of the country. It follows:

The second Annual Clay Products Exposition will be held February 26th to March 8th, 1913, in the Coliseum, Chicago. It is an event of vital importance to the entire clay working industry and to every manufacturer or dealer in clay products.

The undertaking is one in which every clay manufacturer should assist and from which every individual firm or corporation in the industry will receive lasting benefits both directly and indirectly.

The above statement is amply justified by the testimony of a large number of the exhibitors at the 1912 Show, who are backing up their conviction by planning to put up attractive and instructive exhibits at the coming Clay Show.

If you have not already arranged to take some part it is not too late to assist or encourage this great work. If you cannot make a large or independent exhibit write to the Exposition Company, and we may be able to suggest a way in which you can help, which will be acceptable and agreeable to you. We are planning now for a General Exhibit to occupy a number of prominent spaces—the exhibits for which we desire to secure from all clay products manufacturers not otherwise represented.

Another matter of equal importance is the attendance of all clayworkers at the exposition, and at the sessions of the N. B. M. A. and the various clay manufacturer's association meetings in Chicago during the Clay Show. If you do not exhibit and cannot help, come and aid by your presence. You can at least add to the strength of numbers. Matters of great general interest to the promotion and publicity end of the clay industry will be up for discussion and the decision to be reached will necessarily affect every clay manufacturer.

The great importance of the Clay Show as a beneficial influence in promoting the use of clay products, cannot be questioned. No single enterprise has ever done so much for the betterment of the clay trade. From this accomplishment, should grow a national understanding and a national organization towards the promotion of those things which are essential to the further development of the clay trade and to securing that attention and patronage to which the superior merits of clay products entitle them. The opportunities for work along the lines contemplated are many, the work is of gigantic importance and the exposition has made a noble beginning.

It is vital that some such crystallization of effort take place. There will never be a better opportunity and there will never be a better start toward the ends which we desire to accomplish, as the entire country knows of the Clay Show. Through the Clay Show the public will be educated to more fully appreciate the value and advantages of clay products. The show is distinctly a promotion and advertising proposition and at the coming meeting an organization should be effected, the entire object of which should be toward the most efficient exploitation of all clay products in all parts of the country. The time could certainly not be more propitious nor the needs more urgent.

Let us take advantage of the prestige of the Clay Show and with the experience of our other organizations let us launch a campaign which will echo from coast to coast and result in gaining recognition for clay products wherever it is entitled to recognition.

With best wishes for a greater clay industry, I am

Yours very truly,

Clay products Exposition Company,
R. C. Penfield, Pres.

The matter unquestionably will come up for discussion during the convention meetings of the N. B. M. A. and the B. B. A.

CANADA LEADS IN BRICK CONSTRUCTION

Permits Issued During 1912 Show Clay Products Far Ahead of All Other Materials and Manufacturers Have Still Rosier Future

By M. MILLER



CANADA probably led the world in building operations during 1912. Toronto heads the list with a total of \$27,401,761. Of this amount \$15,696,685 was devoted to the erection of cottages and pretentious residences and it is noteworthy that burned clay material for construction was used almost exclusively. The latter sum represents a total expenditure for 5,755 house permits. Out of this number 5,484 specified burned clay products, at an average cost of \$2,820 per building and a sum total of \$15,466,040.

Only 271 permits called for frame construction, or approximately one to every twenty brick houses. This report is only one of the many and conveys the Canadian's attitude as to the proper building material. There are many other cities, although not so large, whose figures, taken in proportion, would equal if not excel the Toronto report in the consumption of burned clay products.

The building expenditures for thirty-seven of the largest cities and towns in Canada for 1912 reached the huge sum of \$185,898,535, compared with \$131,891,729 in 1911, or an

\$11,128,462, as compared with \$10,079,385 in 1909, or an increase of 10 per cent. Out of 4,873 permits issued, 4,490 called for burned clay material.

House Permits in Toronto for 1911.

	Number.	Value.	Average Cost.
Brick	3,826	\$10,456,875	\$2,733
Roughcast	319	317,035	993
Roughcast and brick.....	870	1,281,220	1,472
Frame	422	345,180	818
Apartment	77	1,103,000	14,324
Total	5,514	\$13,503,310	\$2,450

In this year 77 apartment houses were erected of burned clay. The year 1911 shows a 20 per cent increase over 1910. The total number of house permits granted in 1911 was 5,514, of which amount burned clay material received 5,092, while only 422 called for frame construction.

House Permits in Toronto for 1912.

	Number.	Value.	Average Cost.
Brick	4,382	\$11,864,925	\$2,707
Roughcast	243	220,915	909
Roughcast and brick.....	779	1,174,700	1,508
Frame	271	230,645	851
Apartment	80	2,205,500	27,444
Total	5,755	\$15,696,685	\$2,727



Toronto's New Hospital—A Model in Fireproof Construction—All Buildings Faced with Fancy Face Brick.

increase of 41 per cent. With Toronto in the lead, Winnipeg comes second with \$20,475,350, an increase of 16 per cent over last year; Calgary third with \$20,394,220, an increase of 58 per cent over 1911; Montreal next with \$19,641,955, a gain of 35 per cent over the previous year; Vancouver fifth with \$19,420,432, which shows an increase of 10 per cent over the preceding twelve months, and Edmonton sixth with \$14,446,819, an increase of 293 per cent over 1911. The next four cities all run above the five million mark. The highest percentages of increase are held by Port Arthur (319), Edmonton (293), Medicine Hat (282), Stratford (255), St. Catharines (206) and Maisonneuve (125).

The total building expenditure in 1910, in which burned clay products were used as the building material, was

In 1912, the building expenditure for clay houses was \$15,466,040, and compared with \$13,158,130 in 1911, it shows an increase of 20 per cent. Eighty burned clay apartment houses were built and this material was used in 5,484 cases out of 5,755. The average cost per burned clay building was \$2,820. Taking the entire four years into consideration, clay products was the specified material in 19,012 permits and wood in 9,552. Of all the houses erected in this length of time, there were nineteen built of clay products to every one of frame construction. The total figures for building of burned clay materials in the same period amounted to \$49,832,017, as compared with \$976,545 expended for frame structures.

In 1909, the average cost per building was \$2,555, while in 1912 it was \$2,820, which shows that the quality is on

the upward move. Building operations have increased 50 per cent in the last three years.

These consistent returns and the overwhelming majority of cases in which burned clay products were preferred, indicates that the day of doubt and speculation as to the proper building material is past, so far as Canada is concerned, and the example set is one that the United States could profitably follow.

In the past few years clay working plants alone have been responsible for the birth of numerous small towns in Canada, and on several occasions when the establishments were of extra large size they have given rise to the saying that "towns were made over night." The clay plants in Canada, where some of the largest in the world are located, are capitalized from \$50,000 up into the millions. These plants have a daily capacity ranging from 50,000 up to 500,000 brick per day and give employment to anywhere between 50 and 500 workmen.

An abundant assortment of clays and shales are to be found in this country equally adaptable to the making of common brick to the manufacture of high class pottery. Quebec and Ontario are devoid of coal, though both have access by convenient transportation to rich coal mines in adjoining provinces and states. The climate in Canada, not so warm as the United States in summer, yet colder in winter, is very favorable for clay-working plants as the atmosphere is dry throughout the entire year. The many rivers and lakes afford excellent locations for establishment of plants, as considerable shipping can be done by water and thus a great saving in transportation is brought about. The railroad connections, while not as good as they might be at the present time, are being constantly extended and improved upon and within

tile meets with the same approval and usage in the future as it has in the past, an immense trade in this line will open up.

The clay industry of Canada, developing rapidly, is still in its infancy. In the past few years the industry has gained wonderful headway in all parts of southern Canada.

Concerning Toronto's outlay of twenty-seven and a half million dollars, it remains only to be said that during the



Massey Music Hall, at Toronto, Can.—A Substantial Brick Structure.



The Temple Building—One of Toronto's New Office Buildings.

a short time a very high state of efficiency will be obtained.

Canada is becoming more important every year as an agricultural country. It is exporting not only grain, but also live stock to foreign countries, and when the rich prairie lands of the Northwest are brought under cultivation this development will give rise to the use of an enormous amount of drain tile, and if the burned clay

last few years the city's development has been maintained so continuously that it would be fair to regard it as the structural barometer of Canada.

In the January issue of "The Canadian Builder and Carpenter," a review of the building operations in Canada for the past four years is given. It will be noted that concrete structures are not mentioned. The following tables show the total expenditure and the number of permits for the erection of residences only. Incidentally, the following figures do not include North Toronto, which was recently annexed:

Permits for House in Toronto 1909.

	Number.	Value.	Average Cost.
Brick	3,049	\$8,899,315	\$2,918
Roughcast	240	215,625	898
Brick veneer	102	155,550	1,525
Roughcast and brick.....	555	808,895	1,457
Frame	118	120,045	1,017
Total	4,064	\$10,199,430	\$2,509

These figures show that there were 4,064 permits, and out of this number 3,946 specified burned clay products, while only 118 called for frame construction, or an average of one to every thirty-five brick houses. The average cost per building was \$2,555 and the total expenditure for brick houses was almost a hundred times greater than for frame houses.

House Permits In Toronto, 1910.

	Number.	Value.	Average Cost.
Brick	3,535	\$9,907,377	\$2,802
Roughcast	237	190,840	805
Roughcast and brick.....	600	866,950	1,445
Frame	383	280,675	732
Brick veneer	118	163,295	1,383
Total	4,873	\$11,409,137	\$2,341

The Canadian clayworker has a great future ahead for him, as building has just begun in the Western Provinces, where the Government is lending every encouragement to development.

SALESMANSHIP—LOCAL ADVERTISING

Being a Department for the Purpose of Presenting Ideas on the Subject of Creating a Demand for Burned Clay

Believing that a department devoted to local publicity work among the clay manufacturers would be of material benefit to the readers of "Brick and Clay Record," one is launched with this issue.

Those interested in the subject may feel that they have the privilege of using these columns freely for discussion. An exchange of ideas would greatly assist in making the department of practical value, and those who have used publicity in an effort to create a local demand are urged to send samples of their advertising and such other information as may be of benefit to others.

By A STAFF WRITER



HERE is no one subject that appeals to the average clay manufacturer more than that pertaining to the selling end. Most clay workers have absolute confidence in their ability to make all the burned clay products that may be required in their community. What worries them is to SELL what it is possible for them to MAKE.

When we look over our territory and see the great possibilities for the use of brick, or hollow tile, or drain tile or any of the other products that we are manufacturing, and then realize how little we are actually interesting these prospective customers, it is time to sit down and do some figuring.

We see Neighbor Jones erecting a handsome concrete house and we hear of Neighbor Brown letting the contract for a seven-room frame residence and we feel nettled. How foolish they are to be building "Air Castles" like that! Two miles from town, Farmer Smith is putting in car loads of concrete tile and yet we KNOW he is making a mistake.

We hear on every side the merits of concrete proclaimed and clay products are barely mentioned. If they are it is

the old stereotyped argument—cost. And the general impression is prevalent that brick IS expensive.

The local newspapers and the great city dailies are full of suggestions for the use of concrete. The popular home and farm papers devote columns to simple and inexpensive uses of concrete. We look in vain for something about brick or drain tile or the other clay products.

If we draw the proper conclusions we must blame our-

selves—not the public. They have been educated to think of these things and even buy them.

If we reach the proper decision, after having drawn the right conclusion, we will set out to do a little educating in our own community.

There is nothing like publicity for creating a demand for anything. The manufacturers of breakfast food realize this, and when they decide to put out a new brand they take the short cut and flood the newspapers of the land with their advertisements. They do not make just one attempt, either—they map out a consistent and persistent campaign and they adhere to it. Day in and day out they tell you of the virtues of Bunkem's Sawdust Filler, and, after a while,

Compliments BRICK AND CLAY RECORD, Chicago

Silos built of brick defy frost, fire and time

When you build a silo you build it for service. It should have fire-resisting qualities—frost-defying capabilities and it should last for all time.

Neither wood nor concrete answer these requirements.

Wood is inflammable—fails to keep out frost, fails to stand the extraordinary pressure of the silage, fails to stand the chemical action.

Concrete cracks and disintegrates from cold—crumbles from the action of the chemical properties of the silage and, unless heavily and expensively reinforced, fails to stand the heavy pressure from within and gives away before fire.

Clay Silos cost less to build than wood

Silos built from burned clay cost less to build than those made from any other material—the average difference being \$50 to \$150.

F. H. Edwards of Orion, Ill., built a brick silo 32 ft. in height, 16 ft. in diameter. The wall is 8 inches thick for 21 ft., and 4 inches the rest of the way. It cost him \$300, or \$75 less than a wood silo of the same size.

G. A. Pbanz of Geneseo, Ill., has a 32 ft. brick silo with a 4-inch wall all the way and 16 feet in diameter. It cost him \$241, which he says is \$100 cheaper than any other form of construction.

Isn't it worth while to have a fire-proof, frost-proof, time-defying silo of brick?

The Champaign Clay Products Association
Champaign, Ill.

INSTRUCTIONS TO PRINTER: Set double column, six inches deep. Use nonpareil rule border. Set display in Cheltenham lower case. When this ad appears in your paper, send a copy containing the same to BRICK AND CLAY RECORD, Chicago.

(The above advertising suggestion is one of a series which will appear in this journal.)

you begin to think of Bunkem when you sit down to your morning meal and the next thing is to buy a package of Filler.

The successful merchant of today is he who GOES after his trade and not he who WAITS for it to come TO him. The same is true of the clay manufacturer.

Of course, if you could send a salesman to every man in your community daily and present to him the arguments of burned clay you would be doing the ideal publicity work, but you can't. Cost would prevent such a course. Even the smallest plant would require a small army of salesmen to carry out such a project.

Your next best plan is to come as near doing this without the expense, and that is through printer's ink. Let your local newspaper be your salesman and carry your story daily. It may take a little longer to convince a prospective customer, but it is a sure way and an economical

method of landing the customer in the long run.

And there is the cumulative effect of this continual hammering. Your reader may not be impressed today, but tomorrow or the next day or six weeks or six months from now, he will begin to think and once you have got him to thinking you have won a victory, for no one who gives clay products a SERIOUS consideration would listen to the oily talk of the salesman of any other building material.

It is the purpose of this department to take up the subject of local publicity campaigns in the fullest details, and in the next issue a definite plan will be suggested. It is the intention of the editor to present practical examples of good advertising, to show how they may be best used and when. The sample ad that accompanies this article is one of several in a series that will be printed and it is suggested that they be clipped and kept for future use.



CEMENT HAD BIG SLUMP IN 1911

Late Reports Give Considerable Decrease in Price
and Interesting Statistics Show Comparative
Figures for Number of Years

In view of the alarming statement contained in the report of the Geological Survey for 1911, to the effect that the value of clay products showed a decrease of some seven million dollars for the year, it is interesting to note that the total valuation of the production of cement for 1911 also showed a falling off of more than two million dollars, notwithstanding the fact that there were 79,547,958 barrels produced in 1911, valued at \$66,705,136, as compared with 77,875,145 barrels in 1910, valued at \$68,752,092 which shows a reduction in price from 89 cents to about 83 cents a barrel, or an increase in quantity of about 2.27 per cent and a decrease in value of 2.98 per cent.

In the summary of the mineral production of the United States, compiled by W. T. Thom, the following interesting figures appear, which show the fluctuations in price and production of the various kinds of clay products and cement, and also of sand-lime brick for 1910 and 1911.

CLAY PRODUCTS.—The value of all clay products in 1911, as reported to the Survey, was \$162,236,181, as compared with \$170,115,974 in 1910, and with \$153,838,171, the average annual value for the five preceding years. The pottery products were valued at \$34,518,560 in 1911, as against \$33,784,678 in 1910. The imports for consumption of pottery in 1911 amounted to \$10,638,616, as against \$11,131,158 in 1910. The imports of brick in 1911 were valued at \$166,133, against \$206,613 in 1910. The exports of brick in 1911 were valued at \$2,264,354, against \$1,602,913 in 1910, and the exports of pottery at \$1,401,366, against \$1,041,689 in 1910. The imports of kaolin or china clay in 1911 were valued at \$1,461,068, as against \$1,593,472 in 1910. The imports of other clays amounted to \$235,254 in 1911, against \$320,891 in 1910.

CEMENT.—The total production of hydraulic cement in the United States in 1911 was 79,547,958 barrels, valued at \$66,705,136, as compared with 77,875,141 barrels, valued at \$68,752,092 in 1910, with 66,689,715 barrels, valued at \$53,610,563 in 1909, and with 45,583,855 barrels, valued at \$43,529,447, the annual average production for the years

1904 to 1908. The Portland cement production in 1911 was 78,528,637 barrels, valued at \$66,248,817, as compared with 76,549,951 barrels, valued at \$68,205,800 in 1910. The production of natural cement in 1911 was 926,091 barrels, valued at \$378,533, as compared with 1,139,239 barrels, valued at \$483,006 in 1910. The production of puzzolan cement in 1911 amounted to 93,230 barrels, valued at \$77,786, as against 95,951 barrels, valued at \$63,286 in 1910. The imports for consumption of hydraulic cement in 1911 were valued at \$242,722, as compared with \$395,526 in 1910. The exports were valued at \$4,632,215, against \$3,477,981 in 1910.

SAND-LIME BRICK.—The production of sand-lime brick in 1911 was valued at \$897,664, as against \$1,169,153 in 1910; and against 1,109,625, the average value for the five-year period from 1905 to 1909.

Figures presented by E. C. Eckel, Consulting Engineer at Washington, in regard to the production of stone, clay products and Portland cement from 1900 to 1910, show that the total stone output doubled during the period, clay products increased 76 per cent and Portland cement output increased 635 per cent.

PRINTS SPECIAL CANADIAN NUMBER.

American Machinery Concern Shows Unusual Enterprise During Annual Convention

A special convention number of "The Claycrafter," the house organ of the C. W. Raymond Co., Dayton, Ohio, was issued during the annual session of the Canadian Clay Products Association at Toronto, Jan. 14-17.

One of the features about the publication was that it was a Canadian product, the magazine being printed in Canada by Canadian printers, on paper made by Canadian paper manufacturers, the special articles in the editorial pages being written by Canadian writers.

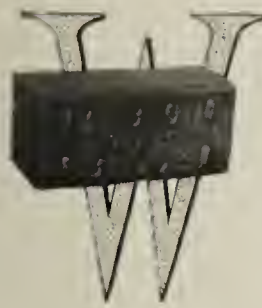
"The Claycrafter," always a most creditable publication, was an unusually attractive one in this issue and contained many very interesting papers on Canadian clays and their treatment.

An editorial announcement that was received with considerable enthusiasm during the convention was the offer of the Raymond Company to furnish gratis the machinery equipment for the proposed Toronto School of Ceramics. The generous offer was accepted by the association.

LAY-OUT SHOWS ENGINEERING SKILL

New Plant of the Albion Shale Brick Co., Albion, Ill., Modeled After Latest and Most Approved Plans by L. E. Rodgers Engineering Co.

By A STAFF WRITER



WHEN the Albion Shale Brick Company, a new Illinois corporation, owning 80 acres of valuable shale land fronting the Southern Railway Station at Albion, Illinois, planned to build and equip one of the largest and most modern paving brick plants in the country, representing an investment of \$200,000, it found the peculiarly favorable lay of the land was particularly adapted for building a plant that could be operated with a minimum amount of labor and produce a maximum amount of finished product.

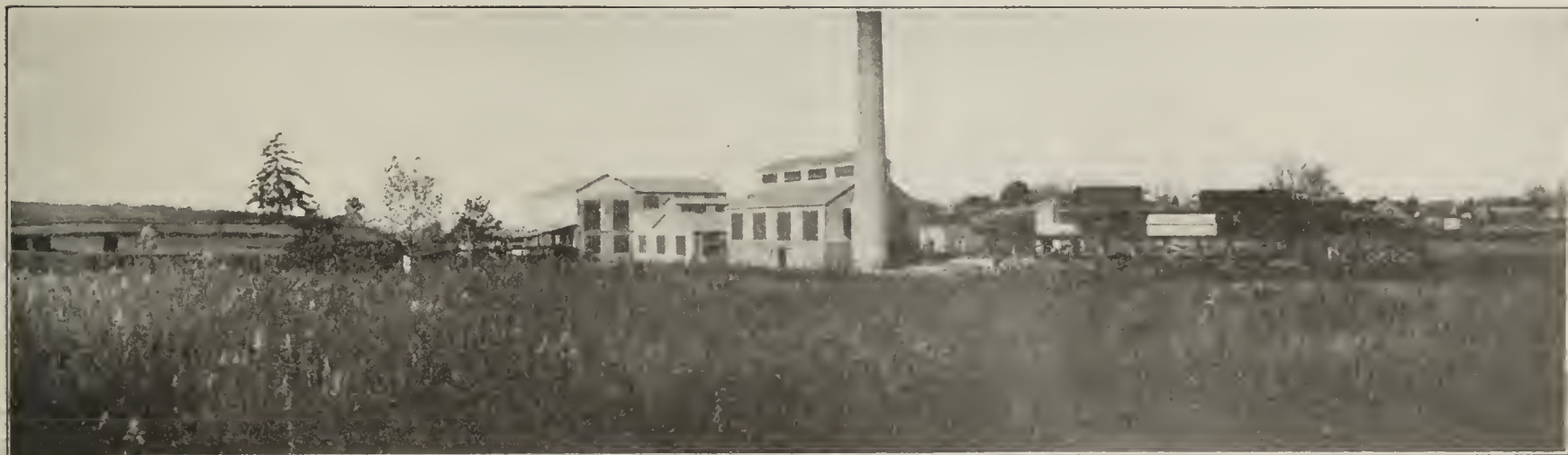
The factory is located on sloping ground at the foot of a hill from which the clay can be brought to the plant by gravity for many years to come, thus assuring low cost of haulage and permanent economy.

The L. E. Rodgers Engineering Co. of Chicago has designed what is considered to be one of the most modern and up-to-date clay working factories in America. The buildings themselves are commodious, substantial, well lighted and thoroughly ventilated and are built of con-

The coal and screening apparatus, together with the coal storage bins, will be a special feature of this plant and will be complete in every detail. It will be arranged so that the coal is unloaded from a special elevated track 8 feet above the ground and of sufficient length so that three cars can easily be unloaded at one time. The coal will then be conveyed underground to an elevator which carries it to the top of the building where it will be screened and stored in different bins, from whence it will be conveyed to the boiler room and the continuous kiln.

All Equipment Most Modern Type.

The brick machinery is of modern construction and comprises, at present, one Canton special brick machine with cut steel gears, one heavy duty 12-foot pug mill, one large size rotary automatic cutter, five represses and four 9-foot dry pans manufactured by the Bonnot Company of Canton, Ohio. The plant will be equipped with a Haigh continuous kiln which, when completed, will contain 62 chambers, 30 of which are now complete and in operation. The entire kiln, covering an area of 87x408



Panorama View of Extensive Works of the Albion (Ill.) Shale Brick Co.

crete, brick and steel, with asbestos roofs, and are thoroughly fireproof.

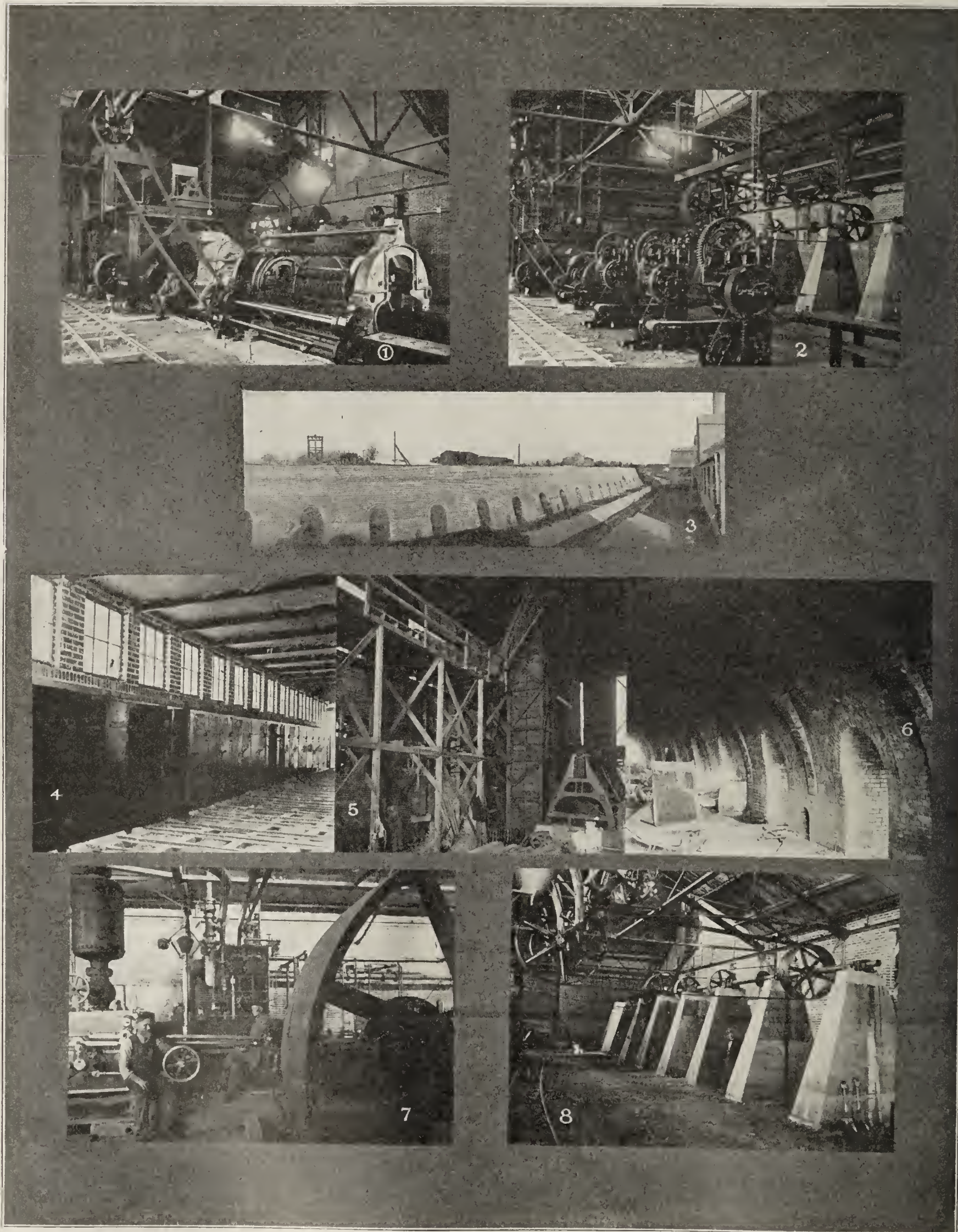
The main machine room is 53x120 ft., pan room 29x75 ft., engine room 33x70 ft., boiler room 53x58 ft., and the 20-track Rodgers Waste Heat Dryer is 100x100 ft., arranged with ample loading and cooling platforms. A machine shop is located between the fan rooms and a line shaft run from one of the fan engines drives the various machines. The buildings throughout are compactly built and arranged for economical handling of the material and finished product.

Pure water is obtained for the power plant through a pipe line 1000 feet long laid below the frost line, which leads to an elevated reservoir of large area containing water to the depth of 17 feet. The power plant includes a battery of Heine water tube boilers, equipped with Illinois stokers, a 600-horsepower Hamilton corliss engine, an Ideal engine for driving the 75 k.w. General Electric generator, which is used for lighting the plant and furnishing power for the motors which operate the coal handling conveyors and electric transfer car. This electrical equipment was installed by the Electric Construction & Machinery Company, of Rock Island, Illinois.

feet, will be under a fireproof roof. Through the central court of the kiln runs an electric transfer for use in taking the dry brick into the kiln and the burned brick out to the storage yard. Along either side of the kiln, running the full length and beyond along the storage grounds, are depressed railroad tracks for loading the brick, so that by means of gravity carriers, brick can be taken direct from the kilns to the cars. The first burn in this green kiln was so remarkably successful that out of the first 300,000 brick taken out of the kiln, it was practically impossible to find any brick that were not well burned.

A number of contractors were instrumental in the building of this plant. The Decatur Bridge Company, of Decatur, Illinois, were the general contractors for the buildings. The asbestos roofing was put on by the Asbestos Protected Metal Company, of Beaver Falls, Pa.; J. M. Cutshall & Son, of Brazil, Ind., were contractors for the erection of all brick work on the main buildings and the building of the Rodgers waste heat dryer; the Haigh continuous kiln was built by H. M. Houlette & Son, of Rochester, Pa., except the roof, which was contracted to the Decatur Bridge Company. The plans for

ALBION WORKS—A MODEL IN PLANT CONSTRUCTION



Above Are Shown Several Views of the Interior of the Albion Shale Brick Plant, Also Exterior and Interior of Haigh Continuous Kiln. No. 1 Shows the Brick Machine and Automatic Cutter. No. 2 Machine Room, Showing Bonnot Represses. No. 3, 62-Chamber Haigh Continuous Kiln Through which an Electric Trolley Conveys the Ware. Picture No. 4 Shows One End of the Rodger's Waste Heat Dryer. No. 5, Dry Pan Preparing Material. No. 6, Interior View of Continuous Kiln. No. 7, The Engine Room. No. 8, Line Shaft, 80 Ft. Long, Piers 8 Ft. High.

the complete plant were drawn, and the specifications furnished, by the L. E. Rodgers Engineering Company, of Chicago.

The original incorporators of the Albion Shale Brick

president; Walter Colyer, secretary, and Elbert Epler, treasurer. F. E. Schultz, formerly with the Bessemer Limestone Company, of Youngstown, Ohio, but for two years past with the Barr Clay Company, of Streator, Illi-



Clay Plant of the Albion (Ill.) Shale Brick Co.—Clay Conveyed to Plant by Gravity System.

Company were L. L. Emerson, Walter Colyer, Elbert Epler and H. J. Strawn, who, together with A. C. Millsbaugh, constitute the present board of directors. The officers are J. H. Strawn, president; A. C. Millsbaugh, vice-

nois, is factory superintendent, while the general business of the company is principally looked after by the secretary, who was, for six years, secretary of the Albion Vitrified Brick Company.



RESENTS REMOVAL OF DUTY

**Representative of American Clay Producers' Association
Urges Retention of Present Duty—Its Removal
Will Mean Financial Ruin for Many Concerns**

(By Special Correspondence.)

Washington, D. C., Jan. 23.—Asserting that if the present duty of \$2.50 is removed it would mean that the American producers would inevitably have to go out of business, Peter W. Morgan, representing the American Clay Producers' Association, appeared before the House Ways and Means Committee and urged that there be no reduction of the present schedule.

"This association," said Mr. Morgan, "was not organized for the regulation of prices, division of territory, or for any unlawful purpose, but simply for the purpose of taking united action in such matters as may affect the general welfare of the constituent members and the china clay industry. We are all engaged in the china clay or kaolin industry. There is a duty of \$2.50 per gross ton charged on imports of clay classified under schedule B, paragraph 90."

Mr. Morgan then explained to the committee that the sedimentary clays are found under surface overburdens ranging from 10 to 50 feet, every ounce of which has to be removed.

After explaining how it was necessary to refine by levigation in water a great majority of the clays before shipping, Mr. Morgan continued:

"The industry is a comparatively young one and has involved a considerable investment of money and an exhaustive amount of energy in every department for the purpose of developing the most economical methods of producing the clays suited for the different commercial uses.

"The members of our association have all gone through

exasperating experiences, have devoted much time and capital to the working out of the numerous problems connected with their business. Few of them have reached the point where the returns are commensurate with the investment of time and money, and we therefore urge that your committee allow the duty to remain as it stands."

Mr. Morgan then gave a number of reasons why the committee should give favorable consideration to his request. First, he said, it was an infant industry that had been instrumental in developing natural resources in various sections of the country, particularly in the South. The domestic production of kaolin, he pointed out, has materially reduced the price of the imported article, it being within the memory of man still engaged in the business when domestic china clay sold for as much as \$15 a ton, as against the present price of from \$4 to \$5. The miners of this country, he told the committee, are compelled to fix their prices to a large extent on what the foreign clays of similar qualities are offered at.

"The paper makers," continued the witness, "who are our largest customers, will, in all probability, ask for the removal of the duty on clay, and they or the importers will not suggest to your honorable committee that the domestic production has been the means of reducing the cost of both American and foreign clays. The present price of our products range from \$4 to \$6 a ton at the mines, and the members of this association beg to submit for your consideration the fact that if the duty of \$2.50 is removed and it should appear that our prices have to be reduced to meet the reduction in cost, we should inevitably have to go out of business, there being no such margin of profit as would permit us to operate.

"The Government at the present time derives an annual revenue of approximately \$600,000 from the duty on this commodity, and we believe that if this duty was removed entirely, or in part, that such a reduction would produce so infinitesimal a diminution in the cost of articles into the manufacture of which it enters as to give no benefit to consumers."

EDITORIAL SECTION

Vol. XLII CHICAGO, FEBRUARY 1, 1913 No. 3

THE CAVE MAN'S LESSON

In a recent issue of the Sunday editions of the Chicago Examiner, the New York Journal, the Boston American, the Los Angeles Examiner and the San Francisco Examiner—the great string of Hearst papers, there appeared a cartoon and an editorial.

The cartoon is reproduced in the editorial section of this journal and extracts from the editorial are reprinted on this page.

The cartoon, as you will perceive, represents the man-monkey of two hundred thousand years ago—your ancestor, the original cave-man.

The artist has imagined this early ancestor of ours brought forward to our day and time and has perched him on eminence so that he may look down upon a modern city.

The newspaper editor, in commenting upon the picture, draws a great lesson of co-operation therefrom. Here is what he says:

If it were possible for this man monkey to look upon a modern city he would wonder and refuse to believe his eyes. Yet that city WAS IN THE CAVE MAN'S BRAIN.

For even in the brain of the lowest of our ancestors there was a spark of CO-OPERATION.

And the modern city of today and all great material achievements are the result of co-operation—each man helping and working with his fellows.

How often have we said these same things to you, Clayworkers of the Nation? How often have we tried to impress upon you the value of co-operation—of helping each other, of joining hands in accomplishing that which, individually, you fail in?

There is nothing new about this Get-Together movement. It is as old as civilization itself—as old as the man-monkey of two hundred thousands years ago, if we accept the logical reasoning of the newspaper editor who says:

Into the brain of this primitive man you could not possibly force the faintest conception as to what a modern city meant. You could not talk to him of iron, for he never saw iron to know what it was. You could not talk to him about buildings, for he never saw a tool of any kind. A sharp stick hardened in the fire, used to stab a weak animal or a semi-human enemy; a piece of stone accidentally sharpened by nature, fastened to the end of a club by the sinews of an animal—such were all the tools that he knew.

YET—AND THIS IS THE SUBJECT OF TODAY'S EDITORIAL, AND ONE WORTH YOUR THOUGHT—IN THE BRAIN OF THAT PRIMITIVE MAN, WITH HIS LOW FOREHEAD, HIS HIGH EARS, HIS PROJECTING JAWS AND ALL HIS BRUTALITY, THERE WAS THE SPARK TO WHICH WE OWE THE GREAT CITY OF TODAY AND EVERY ACHIEVEMENT OF THE HUMAN RACE THAT HAS SLOWLY RISEN DURING A QUARTER OF A MILLION YEARS FROM THIS APE MAN'S CONDITION TO OUR OWN, AND THAT IN OTHER MILLIONS OF YEARS TO COME IS DESTINED TO RISE TO HEIGHTS OF WHICH WE HAVE NOT THE FAINTEST CONCEPTION.

As you look upon the ape man of a quarter of a million years ago looking at a city he cannot understand, remember, that the day will come on this earth when we of our day would look at REAL civilization and real accomplishment hopeless and puzzled as this man ape looking at our modern city.

CO-OPERATION: There is the great word, the key to progress with the real "tool" with which man builds civilization, happiness and order out of savagery, misery and chaos.

To co-operate is to WORK TOGETHER. The descendants of this monkey man have built the cities that you see, and will build palaces and a civilization above our wildest imaginings, because in his brain, half developed, under the thickly thatched skull of that primitive man, there was already the idea of WORKING TOGETHER.

The newspaper editor attempts to show how the germ of co-operation was born. Whether it is or is not the true narrative of man's earliest efforts to prove his superiority through exercising his power of reasoning, it proves the point and is worth reading. Here is what he says:

In one cave on the hillside, high up, there lived a half-man family. A man, a woman, with an untanned skin thrown around her shoulders, the hide of a wolf or some other animal, sat on a pile of branches. Around them were children, one for every year, except that here and there one year's child might be missing—stolen and eaten by the man living in the next cave.

A wild, dreadful group was this "human family," with huge claws, big teeth, red hair falling down over the eyes, and covering nearly the whole body. The man and the woman look out, and below in the valley they see a mammoth go by, a monster elephant of the olden days, with tusks twenty feet long curl-

IF THE MAN-APE COULD SEE THE GERM HE PLANTED



(Reproduced from the Chicago American)

ing over his head, a huge trunk, with enormous feet which mean death to everything in its path.

In that great hulk there is meat enough for Winter, meat to keep the savage man and his wife and children happy, fat and safe. And the mammoth goes by in safety. NO SINGLE ANIMAL can harm him. He storms at the individual cave man, and all scattered animals.

The man in his cave must be content to capture and eat smaller animals, even insects and small snakes when nothing better can be had.

But in time the idea of CO-OPERATION, the thought that it might perhaps be well to work together, the idea which changed man gradually from an animal to a man, wakes up in the different caves along the side of that valley.

Two of these savage men get together, and three and four, and twenty. Instead of trying to murder each other, instead of stealing and eating each other's children, they decide that they will combine AND GET THE MAMMOTH.

With pieces of sharp sticks, with their bare fingers and bleeding nails they dig a hole in the ground, spending weeks at the work. They cover the hole with branches and with leaves.

By and by the mammoth comes that way. He glances with contempt at the individual monkey man leaping to one side before him.

But when the twenty or fifty UNITED savage creatures begin pelting him with sharp stones, frightening him with hideous yells and whistling, the mammoth hastens his pace, forgets his caution, moves slowly to his doom, AND CRASHES INTO THE DEEP, NARROW HOLE DUG BY CO-OPERATION.

When the monkey men, standing around the deep and narrow hole, look down upon the monstrous, struggling, helpless mammoth, the first of its kind to be caught by co-operation, they look down UPON THE BASIS OF CIVILIZATION, UPON A REALIZATION OF THE IDEA THAT BUILT THE MODERN CITY, THAT FORCE IN THE HUMAN RACE THAT WILL DO ALL THE MATERIAL WORK THAT IS TO BE DONE BY MEN IN THE FUTURE.

Too true! the same idea applied today has made possible all human achievement—made possible this Government and the government of other nations—made possible the comforts and the luxuries we enjoy—made it possible for man to perform his labors more easily.

And whatever we HOPE to achieve, in **WHAT-EVER** line of endeavor, we must remember that there is only **ONE** way to do it and that is by pulling **TOGETHER**.

There is a great lesson, Clayworkers, in this story

of the cave man's struggles, fanciful even though it may be, so read further what the newspaper editor has to say:

Once the cave men found that with co-operation they could kill a mammoth they began to think less about killing and eating each other.

The big beast that they had slain by working together supplied more than enough meat for all. The women and children gathered to see the marvelous thing. Cannibalism went on spasmodically for a long while, when it seemed to be desirable. Few of us are descended from any but cannibal races. And those whose ancestors were NOT cannibals were the weakest of us, for they had not enough meat to give their children in Winter.

Some co-operation worked so well that groups of men would decide never to kill each other, never to eat each other's children even when they had a chance to do so. All the inhabitants of a valley would combine to kill animals together and to fight against the inhabitants of other valleys.

Thus, through co-operation, there came the building up of villages, little groups of families sticking together and fighting the enemy, then through wider co-operation there came the larger groups of human beings and finally what we call nations and the system of today. That is, our system in which a nation combines to protect all those within the nation, but kills, fights and murders those of other nations, calling murder "war."

What the killing of that old mammoth was to the group of cave dwellers, the building of a great skyscraper is to the men of our day.

No man, even though he might live for a thousand years, could build a modern building. He could not lift one of the beams. Even if you gave him all the material, he would still be helpless. But we combine, and we raise these marvelous cities, we throw bridges of steel across the rivers, and tunnels of steel under the rivers. We build engines that will carry one thousand human beings more than a mile in one minute. And we stretch a thin wire, a pathway for electricity, and it brings to us current that we can use to light our houses or heat our homes, to run trolley cars, to electrocute criminals, to carry telephone messages, sing songs on phonographs, wash clothes, sweep the floor—men co-operating have done wonders.

As you look at this savage man whose brain supplied the spark of co-operation that built the city upon which he gazes, do not forget that co-operation has only **BEGUN ITS WORK**.

Take the lesson to your heart, Clayworker, and remember while you are thinking over it that you are endowed with brains—with a greater power of reasoning than your ancestor had and that you can accomplish **MORE** with **LESS** effort.

IOWA'S OPPORTUNITY

Iowa is a bright spot among the clay states of the Nation.

Its clay manufacturers have the **Get-Together Spirit** in a greater degree than any other state.

They have **MORE** and **BETTER** organizations than any other state in the Union.

They attend the meetings of these organizations better than members of the associations in other states do, even if this attendance is less than it should be.

They are the most prosperous, taken as a whole, and, naturally, they complain less.

When the Iowa clayworker is confronted with a problem he takes it before his association and has it threshed out and solved.

He believes in **CO-OPERATIVE EFFORT**.

He **KNOWS** the value of presenting a **UNITED** front on any matter of **COMMON** interest.

These conclusions are drawn from the way the Iowans held their annual convention last week.

The meeting was without frills. Secretary Platt didn't even have a printed program.

The members had **CERTAIN** problems to **SETTLE** and they went there to **HAVE** those problems **SOLVED**.

There was no time nor necessity for a long program of papers on the various subjects of manufacture that is customary at state conventions.

The association was called together to discuss publicity work and the get-together spirit.

Only two days were allotted to the convention but these proved sufficient, by sandwiching in night sessions, and when the clayworkers went to their homes they went with the satisfaction of knowing that they had accomplished what they set out to do.

First of all these Iowans wanted to discuss the proposition of district or local association work.

They had learned how Illinois clayworkers at their recent state convention had launched a movement of this nature and they were not slow to see its value.

Now Iowa clayworkers are composed in the main, of drain tile manufacturers, although there is a considerable number of brick and hollow block makers in the State.

During the regular day sessions of the convention, papers and discussions on the subject were presented. No action was taken at **THAT** time because it is the plan of these Iowans to **DELIBERATE** a little on matters of such importance.

The intervening hours between the day sessions and the night sessions were the periods for deliberation.

Then, in the evening the drain tile men, sub-divid-

ed into the manufacturers of small drain tile and the manufacturers of large drain tile, met in separate meetings.

The silo men and the brick men likewise had meetings.

Way into the midnight hour these meetings lasted.

Problems were threshed over in heart-to-heart fashion. Trade conditions were discussed. Whatever differences existed between rival manufacturers were presented frankly and a remedy suggested.

Friday evening, when the convention had adjourned, the State had been organized into several districts and plans had been laid for a great movement throughout Iowa to boost clay products.

The members had gotten **TOGETHER**. There was unity of purpose and unity in action.

Another problem that confronted the members was the question of publicity.

Papers were read on this subject and a discussion entered into on the floor of the convention.

Then, at night, the members held little informal conferences. They decided on the plan to follow.

Next day definite action was taken.

Secretary Platt, one of the most energetic association men in the country, whose services have been given gratuitously and who felt that either his business had to suffer or he would have to resign as an active executive in the association, was induced to remain in the work by the convention setting aside a certain sum for the employment of assistants to relieve him of the details of the labor.

The sum, while small in comparison with the great amount of work the secretary does, is more than the total amount collected by some of the other state associations for the entire year's work.

Having settled this problem the association decided that it had to have more money for the work it **WANTED** to accomplish in 1913, and raised the annual dues from \$1 to \$10 a year.

Then, with a tentative plan mapped out for consideration at a later meeting, the convention adjourned.

This brief resume of what the convention did sounds like business, doesn't it?

Well, those that gathered there were **BUSINESS** men and they went there to discuss **BUSINESS** and they did what they had to do in a **BUSINESS-LIKE** manner.

What a pity that clayworkers all over the country do not look at their state association gatherings in the same light!



CANADA'S PROSPERITY

Perhaps in no other land did the clay product industry prosper as much as in Canada last year.

More new plants were erected in the Dominion and more brick building was accomplished, according to the population, than in any other country.

Elsewhere in these pages, some very interesting figures are given by Mr. Miller, a staff writer. These figures show a wonderful activity in construction, and it is significant that practically **ALL** building construction was of burned clay.

In concrete construction, so little was done the statistician felt it unnecessary to give the figures.

Frame construction represented barely twenty per cent of the whole.

This extraordinary testimonial to burned clay is not confined to city sky-scraper construction, as it is in the **United States**.

The figures given include **HOME** building as well as commercial building construction, and proves one point at least and that is that Canada is profiting by the experience of its older sister countries, and making for permanent and fireproof homes as well as office buildings.

While Canada is not a **NEW** country, and has a history that dates as far back as our own, it is only within the last few years the Government has sought to develop its natural resources and encourage occupancy of the fertile lands to the West and Southwest.

This fostering interest of the Government has caused great colonies to settle in sparsely populated areas.

Cities have sprung up like mushrooms in a night. The wildest stories of the mining camps of the **United States** sound like tame narratives besides some we receive from Canada.

Cities of 25,000 population, with store buildings, factories, schools, paved streets, sewage systems and all the conveniences of the modern community have been planned on paper by great corporations.

Railroads with their connecting lines and feeders have been mapped out and surveyed.

Then the whole was ordered constructed in a **GIVEN** time just like the average business man figures on constructing a single factory or office building.

This is not an exaggerated statement. Cities **HAVE** been built just this way, and more are under way.

Not long since this journal received a brief letter from the president of a great land promoting corporation. In substance it said:

We are planning to build a city of 10,000 population in Alberta. We have the streets laid out ready for the paving and sewers. We have all the buildings planned and ready for the contractor. We have all the necessary factories under contract and we have the people ready to inhabit the city as soon as we can build it.

We can't do anything, however, until we get brick

to build with. For that reason I write to you to see if you can place us in touch with some practical brickmaker who wants to open up a first class plant. Will supply all the capital, if necessary.

It is the spirit that is manifested in the above letter that is making possible the great development of Canada and the excellent showing of clay products.

There will be no Baltimores, no Chicagos, no San Franciscos in the New Dominion.

Those who have built have built wisely. Let the good work **CONTINUE**.



THE SLUMP IN CEMENT

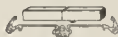
Late bulletins issued by the Geological Survey of the United States show that cement took a decided slump during the year 1911, the total valuation of the cement products falling off more than two million dollars.

Earlier bulletins were more favorable to cement, showing an increase in **PRODUCTION** as against a decided decrease in the **VALUATION** of clay products and the cement fellows were crowing.

There is an old saying that "He who laughs last laughs best," and it is now time for the clay product manufacturer to lay aside his discomfiture and smile.

It seems that the first bulletins issued, merely covered the **PRODUCTION** of cement, and not the **VALUATION**. Cement production **DID** show an increase but the **PRICES** had slumped two and ninety-eight hundredths per cent, or about two million dollars.

It may be that future bulletins may give clay products a better rating and that when the **PRODUCTION** of the industry is known that it will be more favorable than the figures now at hand for comparison.



IN THE REALM OF PUBLICITY.

"Haigh's New System Continuous Kiln," devoted solely to the construction and adaptability of the Haigh Continuous Kiln, is the title of a thirty-two page booklet, recently issued by the American Clay Machinery Co., at Bucyrus, Ohio, owners and controllers of this modern burning system. The high grade quality of enameled paper, together with the beautiful two-color pictures which illustrate the text, make the book unusually attractive and readable, and it is worthy to be filed away for future reference. The illustrations show the interiors and exteriors of parts and divisions of kilns now in operation as well as those now under construction. It also has cross sectional views showing burning chambers and manner of construction. The reading matter not only thoroughly describes the kiln, but also relates to and deals with the adaptability of the Haigh continuous kiln to the varying conditions to be found at various plants. Numerous testimonials received from manufacturers who are satisfied users of the kiln are also contained in the booklet.

The Bonnot Co., of Canton, Ohio, is mailing out to the trade its latest catalogue, number twenty, setting forth the complete line of Bonnot clay working machinery. The cover is very attractive in itself, it being a reproduction in colors of a modern brick plant. The book contains seventy-eight pages, illustrated with excellent illustrations throughout. A stamped and addressed postal card accompanies each catalogue, upon which appears the different kinds of machinery this company manufactures, with a space after each name for checking, in case one desires further information as to any particular equipment. The catalogue is one worthy of preservation, as it contains much valuable information.

"A Good Lesson to Learn," is the well chosen subject of the calendar which the Eureka Fire Brick Works, Mt. Braddock, Pa., is sending out. In the picture a 5-year-old miss is pointing out to an interested group consisting of a dog and a number of dolls that "the 'Eureka' brand fire brick always give 100 cents' worth of service in return for every dollar invested in them."

GENERAL CLAY PRODUCTS EXHIBIT

Prominent Space Has Been Reserved at Clay Show
for Display of Samples from Manufacturers
Not Otherwise Represented

In order to accommodate manufacturers, who for any reason do not care to make extensive exhibits, a number of spaces in a prominent position in the Coliseum, have been reserved for a General Exhibit of clay products. In this exhibit it is hoped a showing will be made of every class of clay products produced in the country. In this way the public can be shown conclusively the importance of the clay industry, its variety and magnitude.

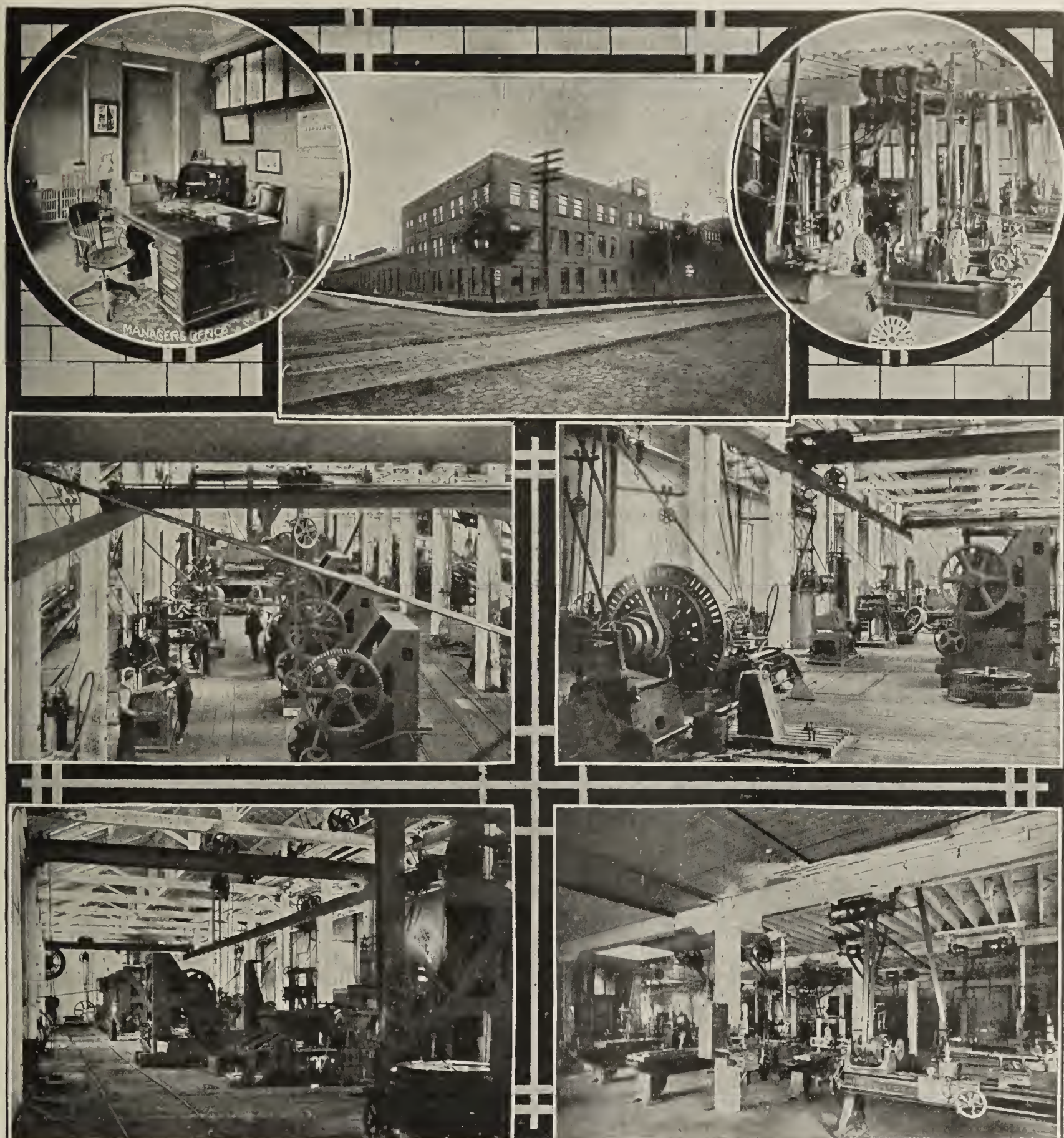
Below may be found a list of clay products and we would be glad if our readers would check off on the list, products of which they could send samples, and return the list to us, signing their name and address as designated.

Do not delay but send in your list and begin to make your selection of samples. We believe this General Exhibit can be made a strong feature of the show, if each does his part.

List of Clay Products.

Fancy, Face and	Acid Tanks
Common Brick	Runner Brick
Terra Cotta	Antique China
Roofing Tile	Imported China
Encaustic Tile	Model Home
Sanitary Ware	Lamps
Sewer Pipe	Marbles
Drain Tile	Tobacco Pipes
Wall Coping	Clay Novelties
Pottery	Crucibles
Faience	Tableware
Garden Ornaments	Bathroom Equipment
Stone Ware	Washboards
Chimneys	Flower Pots
Fireproofing	Terra Cotta Lumber
Hollow Block	Fire Brick
Paving Brick	Garden Walls and Walls
Conduits	showing entrance to es-
Insulators	tates and residences
Dickey Birds	Laundry Tubs
Turpentine Cups	Silos
Name	
Address	

WHERE THE FAMOUS BERG BRICK PRESSES ARE MADE



Views at the Busy Plant of the Berg Machinery Manufacturing Co., Toronto, Can., Showing How the Berg Presses Are Made.

In the entertainment of the guests at the Convention of the Canadian Clay Product Association at Toronto, Jan. 14-17th the members of the Berg Machinery Mfg. Co., of Toronto, were prominent factors. They left no stone unturned to make the guests' stay in the city as pleasant as possible, one of the most enjoyable features of the week being a theatre party given by the Berg Company.

The Berg Machinery Mfg. Co. are makers of the well-known "Improved Berg" and "King Bee" brick presses and other clay machinery.

Over four hundred of the Berg presses have been manufactured and are in successful operation throughout the

United States and Canada, and also a number have been shipped to foreign countries.

The development of this company is typical of the growth of Canada today. The Bergs took to Canada the first dry press brick machine made in the country, and the building trades activity has resulted in an enormous demand for press brick, hence for dry press machines. The consequence has been a wonderful growth in the Berg works some departments of which are shown in the above views. In keeping with its progressive policy the Berg Company is continually looking for further improvements in brick machinery and is now working on some new lines.

PRODUCER GAS-FILLED CONTINUOUS KILN

Saving of Fuel and Labor—Increased Uniformity of Product—Ease with Which Gas is Distributed and Regulated—Among Its Many Advantages

Geo. M. Raymond, president of the C. W. Raymond Co., in a paper read before the Canadian Clay Manufacturers' Association at Toronto, Canada, tells of the evolution of burning methods, and points to the producer gas-fired continuous kiln as the solution of the vexed question of utilizing waste heat from cooling kilns. The use of producer gas as a fuel urged as a means of reducing cost of production at the same time raising quality of output. The paper follows:

By GEO. M. RAYMOND



BURNING brick and burning money as well as burning reflections upon that which has gone to waste needlessly was the very potent factor which started the mother of invention toward conserving not only our natural resources, coal, but also to conserving that other very necessary element to successful brickmaking, "money."

Burning coal is equivalent to burning money. Burning more coal than necessity requires is actually burning money. It is therefore my pleasure to treat with this subject in bold, unbridled facts.

You are all acquainted with the common scove kiln and up draft clamp kiln. Both are simple, and we might say crude. Yet 70 per cent of the brick manufactured to-day are burned under this system.

First—Because it is inexpensive so far as investment is concerned.

Second—Because the balance of the yard did not justify an investment of a more pretentious character.

Third—Because the owners thereof were educated in this simpler way.

Fourth—Because the law of supply and demand had not created in their special case conditions where something better was demanded.

Fifth—We will classify under the title of "various other reasons," those reasons which were probably beyond the control of the parties interested.

Scove Kilns Fuel Eaters.

The scove and clamp kilns are fuel eaters, drawing from the coal supply from 900 to 1,200 pounds for each 1,000 brick or "bats" manufactured. This coal is carted or wheeled around to the various furnaces or fire openings and shoveled into the greedy mouths ready to consume it.

Now, what losses really take place The coal is consumed, but how?

First—Each successive charge of coal has to be heated by the preceding charge of coal, which is already being consumed. Absorption of heat takes place here.

Second—Contrary winds force the fires out of the fire boxes in the wrong direction, lessening your control over the kiln and consuming your fuel uselessly.

Third—Radiation through the walls and top of kiln.

Fourth—By natural draft carrying the products of combustion (smoke) up through the loose platten tops

of every kiln at every firing.

Fifth—A succession of under stoked or over stoked furnaces, where a large quantity of your good fuel is either clinkered or poked into your ash pit to be carted to the dump.

Now, since this has all happened, what is the net result?



We will say 1,000 pounds of coal have been consumed; 1,000 pounds of coal carted around and shoveled into numerous fire boxes for each 1,000 brick burned. The ash from 1,000 pounds of coal to be cleaned out from as many fire boxes as were used, gathered together and carted off to the dump. So much for fuel.

You have probably 60 per cent No. 1 brick; the balance is either overburned or underburned, according to their position in the kiln. In most places, No. 1 or 60 per cent of the product has sound and reliable value and the value of the balance, or 40 per cent, is fluctuating downward, according to what the owner is able to squeeze out of them.

Probably 40 Per Cent of Ware is Off-Grade.

In any event, the result has been the result of an expensive and hard-fought struggle, and it is surprising that the results obtained are as good as they are, considering the opposing conditions one has to contend with. At any rate the labor and fuel bills tell their own story in a very graphic manner.

The square and round down draft kiln is the next step in the progress of systematic burning. Here, we find a better control over the fires and a better concentration of heat affecting the product to be burned.

There is little if any saving in the amount of fuel consumed. The labor of handling the fuel and ashes being practically the same as in the case mentioned before.

The fires are much easier controlled because of the necessary draft being supplied by stack or other devices over which the operator can have some semblance of control.

The concentration of the heat within the walls and crowns gives what is really the solution of its principal merits, i. e., the obtaining of a greater percentage of a uniform first quality product by concentrating the heat and getting the benefit of reflected heat from the kiln crowns.

The continuous type of coal-fire kiln brings us nearer to the ideal and scientific way of burning.

The ordinary top-fired kiln has not established itself in this country to any very marked extent, yet the basis of economic burning started and developed around this very principle.

Continuous Type Nearest to Ideal.

The foundation was laid by Frederick Hoffman, along about 1858, in Germany, and since that time the continuous kiln has passed through a series of successes and failures, all attempts being offsprings of the one principle of continuity.

Many were the failures and few the successes of this type of kiln. The greatest detriment to economy in the top-fired continuous kilns resolved itself into two factors; one, the lack of quantity of high grade ware obtained and the other the inability to obtain high uniform temperatures. The most disagreeable form of loss was the great amount of ware which was spoiled by the ashes and in many cases by a temporary oversupply of fuel at certain spots in the kiln (overburning, clinkering, and even melting down that portion of the kiln where this oversupply of fuel took place).

It has always been an extremely hard matter to obtain uniform high temperature where coal firing brings the carbon in close contact with the fire. First, because of the uncertainty of controlling the fire, and second, because the pre-heated air or oxygen is always ready to rush to the point where the most carbon is consuming, leaving little or no oxygen for the balance of the kiln.

The general economy in fuel consumed in a top-fired continuous kiln ranges from 50 to 60 per cent, but we cannot say that while this 50 or 60 per cent saving is taking place that the labor required to handle the fuel is less than in either the up-draft or down-draft kilns. Nor do we figure that the clean, clear ware which is a more than desirable feature can be obtained by the use of the top-fired kiln.

Points in Scientific Burning.

The discussion of all the above brings us to the point of showing you the most scientific method of burning. Here we have several items to consider which bring about the ideal condition.

First—Economy of fuel.

Second—Economy of labor.

Third—Greatest uniformity.

Fourth—A clean, clear product.

The basis for the solution of all the above was brought about by the inventor of the producer gas fired continuous kiln, P. L. Youngren of Milwaukee, Wis., now deceased. Mr. Youngren took advantage of the conditions in this country where large projects and broad policies are carried out, to utilize producer gas as fuel in burning clay products. He it was who, in this country, applied the principle which has since been the principal factor in producing the ideal conditions mentioned above, and this invention, adapted to the requirements of this country, has come to stay, to be idolized and idealized by the users thereof because of the fact that it is the one perfect process which covers all the opposing elements, which the brickmaker has to overcome.

We will not tell of the early trials through which the kiln passed, but we will turn our attention to the points which make the perfected kiln desirable.

Effects Greater Economy of Labor.

The question of labor, covering the fuel to the kilns and handling the ash and clinker therefrom after burning, resolves itself into this: That the fuel is all handled at one point, i. e., the producers, and the ashes are taken

away from the same point. This certainly is a great stride in the right direction since it not only does away with the distribution of fuel, but keeps the fuel from coming in direct contact with the ware and the cleaning out of the kiln when the kiln is finished is avoided.

The amount of fuel required to burn 1,000 brick at 1,800° F., burning on a 24-hour basis, is about 5¼ per cent of fuel to 100 pounds of brick, or less than 300 pounds of coal per 1,000 brick. This saving in fuel is brought about by the continuity of the kiln, while with the old method of firing in the ordinary type of kiln, just where the kiln is heated to the highest degree then the heated is allowed to go to waste.

With the continuous gas fired kiln, we use the cooling chambers for two purposes: First, to try to obtain a clean, clear product, and to do this we utilize some of the cooling heat to bring the temperature of the green product past the point of water smoking or eliminating from the product the contaminating effects of either alkalies in the material or the products of combustion coming to contact with the green ware. This is done by eliminating the products of combustion and using only the cooling heat.

Waste Heat Pre-Heats Oxygen.

We further use this cooling heat for the purpose of pre-heating the oxygen, which is necessary in the combustion of any fuel and which in this case is producer gas. When the oxygen comes in contact with the gas, it has passed over thousands of pieces of ware in various stages of cooling, and when ignition takes place the oxygen has been heated to probably 1,500° or 1,600° F., so that a considerable saving takes place here.

At this point we will assume that the temperature of the material to be burned is about 1,800° F. and that we have reached this temperature and the kiln is ready to have the fire taken from it.

Instead of letting this heat go to waste, we have carried these products of combustion, this heat, which is a waste product, forward into the next succeeding 4, 5 or 6 chambers, and without the use of any additional fuel raised the temperatures in the next succeeding chambers in order of their continuity, theoretically as follows: The chamber immediately in front of the 1,800° chamber, about 1,500°; second chamber ahead, 1,200°; third chamber ahead, 900°; fourth chamber ahead, 600°; fifth chamber ahead, about 400°, and the next one is watersmoking with cooling heat.

Gas Easily Regulated.

We find that gas as a fuel can be regulated, can be distributed and handled to a degree of accuracy not possible with coal, and it does not require high-priced labor and extensive experience in firing, as in the top-fired continuous kilns.

Coming to the question of uniformity, probably facts will speak louder than any theory that the writer might advance, and we will here state that most of the gas-fired kilns are today burning with a uniformity of temperature, quality, etc., not to exceed a loss of 1 per cent.

It is a common occurrence to go to a chamber that has just been opened and take a brick from the top and one from the bottom of the kiln and find afterward that it is impossible to tell by their appearance from which point in the kiln the brick were taken. There is practically no difference in the brick since there is less than 50° difference in temperature between the top and bottom of the kiln. This is largely due no doubt to the comparative ease with which gas can be controlled, also to the

blanket of heat on either side of the burning chamber, which in a way is one manner of insulating the applied heat from outside opposing forces.

Great care also is used in insulating the tops and sides of the kiln, so as to make the losses in temperature as small as possible; and as a consequence no chilling effect is produced upon the ware.

In the case of paving block this is a very admirable feature. Quick cooling of clay products generally produces brittleness, whereas, with graduated cooling, a hard, tough product is the consequence.

The kiln question is one which is being very seriously considered by the thinking members of the clay working fraternity, and they are all coming to the realization that the conservation of coal, reduction in the cost of labor, the creating of the highest percentage of the high grade ware, with the vast saving of 70 per cent of the fuel now used, makes the approach of the millenium in burning clay wares.

The problem of bringing about these ideal conditions and conserving previous efforts is the all-important question in the manufacturing end of the game.



McLAIN COMPANY BUYS PLANT.

After Passing Through Many Vicissitudes, Champion Works Finds New Owner.

A business deal of considerable magnitude was recently consummated, whereby the McLain Fire Brick Co. became the owner of the Champion Brick Co.'s plant, at Wellsville, O., originally owned and operated by Thomas Silver and a part of the one-time banker's estate.

This brick plant was recently sold to the Bankers' Surety Co., of Baltimore, Md., who held a mortgage on the property in which was invested \$15,000.

The McLain Fire Brick Co. already has one plant in operation in Wellsville, the Buckeye Brick Works, which is one of the successful industries of the city. The owners declare they will immediately improve the Champion plant, repair and add to the machinery and will put it into active operation as soon as possible. When the plant is repaired and put into operation it will give employment to from 50 to 100 men.

NEWS OF REFRACTORIES.

There is said to be a notable increase in demand for fire brick owing to the excellent business which the iron and steel plants are enjoying.

Business is declared to be excellent with the American Fire Brick works at Mill Hall, Pa. The concern is now producing over 20,000 per diem.

The small two kiln plant of the Ohio Valley Fire Brick Co., at East Liverpool, O., has been appraised by D. F. White, E. K. Bennett, and Philip McLean. J. Willis Gaston has been named receiver, with offices in East Liverpool. This firm manufactured a high grade refractory brick under a new process. "Offings" from the potteries were procured and after these were ground, it was mixed with a ball clay, and then worked through a mud machine. The plant was the only one of the kind in the United States using the pottery refuse or waste materials for the manufacturing of brick.

The Louisville (Ky.) Fire Brick Co., is establishing a new plant at Grahn, Ky.

D. B. Porter, president of the Thornton Firebrick Co., with headquarters in Clarksburg, W. Va., reports that their business is steadily increasing, and that the plant is working steadily.

Soisson Company Acquire More Plants.

The Joseph Soisson Fire Brick Co., of Connellsville,

Pa., has made application to increase its capital stock from \$100,000 to \$700,000. Through its general manager, W. F. Soisson, it has acquired four more plants, the No. 4 plant, the Bolivar (Pa.) Face Brick Co. which makes enamel brick and the Phoenix and Globe plants of the Phoenix Fire Brick Co. They were formerly owned by the interests of the Reese-Hammond Fire Brick Co. All these plants are at Bolivar. The No. 4 plant has a daily output of 100,000 paving brick, the enamel plant, 25,000 brick for building purposes; the Phoenix, 20,000 high grade fire brick and the Globe, 15,000 high grade silica brick. The No. 4 and Phoenix plants are now in operation after half a year's idleness. The others will be started soon.

The Soisson Co.'s six other plants are the Volcano, south Connellsville, output 30,000 building, paving and coke oven brick; Kingston, 25,000 high grade fire, coke oven and silica brick; Moyer, 25,000 variety; Davidson, 20,000 fire and coke oven brick; Layton, 15,000 high grade silica brick for coke ovens, glass houses and mills. The Columbia plant was also purchased recently from the Ligonier Silica Brick Co. and has started up after a two years' idleness. The output of all these plants is now 300,000 brick a day, providing the condition of the market warrants it. They will all be managed from the Connellsville (Pa.) office of the company.

Who Makes the "Steel King."

One of our readers wants to know what company makes a fire brick called the "Steel King," and where the company is located.

WISCONSIN ASSOCIATION IN SESSION.

Publicity One of the Most Important Subjects to be Discussed.

The Thirteenth Annual Convention of the Wisconsin Clay Manufacturers' Association is in session at Milwaukee as this edition of "Brick and Clay Record" goes to press. The dates for the meeting are Jan. 29-31, and the headquarters of the convention are at the Republican House.

One of the most important subjects to be discussed at the convention is that of publicity work and the action the organization will take in regard to having an exhibit at the coming Clay Show, although ample time is given to papers on the manufacturing end of the industry.

DEFORMATION POINTS OF SEGER CONES

(Continued from January 15th issue.)

VII. Smaller hard porcelain kiln of about 5 cubic meters content, wood fired.

The heat treatment in minutes was as follows:

Temp. Inc.	III 1	III 2	IV 1	IV 2	IV 3	IV 4	V	VI 1	VI 2	VII 1	VII 2
950°-1000°	38	60	55	80	50	..	..	35	..	..	30
1000-1050	40	60	95	110	80	50	..	65	..	..	60
1050-1100	110	70	105	120	65	70	..	55	..	80	40
1100-1150	125	65	85	130	120	60	..	42	35	75	65
1150-1180	135	40	70	180	130	125	15	30	25	100	60

As is evident from Table 2, the difference in the deformation temperatures of any individual cone, found in different kilns is considerable, amounting to from 40 to 80 deg. At this point, it is difficult to account for this and to select a correct value from among these. The condition of the kiln atmosphere is of great influence on the cones containing iron. Reducing conditions will lower the deformation point by converting the iron to the ferrous state which reacts more readily with the silica. However, the length of heat treatment seems to be of more influence than the reducing conditions and its influence is different depending on whether the temperature is held for a considerable time far beneath the deformation point or whether it is held at a point shortly below the deformation temperature. Depending on its composition, a silicate, on long heating, becomes either more easily or more difficultly fusible; the former is the case when a low melting constituent is present in excess which dissolves the other components while the other circumstance happens where, on prolonged heating, the individual constituents form more difficultly fusible compounds. A typical example of this latter case is the following: Barium carbonate is melted with pure kaolin in the proportion of $2\text{BaCO}_3 : 1\text{Al}_2\text{O}_3, 2\text{SiO}_2, 2\text{H}_2\text{O}$, obtaining a glass melting at about cone 6. This fritt is mixed with enough kaolin to produce $\text{Al}_2\text{O}_3, 2\text{SiO}_2$. BaO which consists of 2 parts fritt and 1 part kaolin which in long heat forms barium aluminum silicate analogous to anorthite, and melting at about cone 35-36, in spite of the excess of the easily fusible fritt. On the other hand if the mixture is heated very quickly, the compound $\text{BaO}, \text{Al}_2\text{O}_3, 2\text{SiO}_2$ is formed in an incomplete state and the mixture melts decidedly lower.

An increase of the melting point of a mixture of silicates, oxides, borates, or, in other words, a mixture corresponding to the composition of cones \$10-01, can be caused by the partial volatilization of some constituent, as boric acid for instance. The result of such a volatilization, is that the surface of the cone becomes deficient in boric acid and therefore more difficultly fusible and surrounds the softening inner part of the cone, with a strong shell, as was clearly evident from an examination of the cones in question.

Crystallizing Media.

Boric acid and many borates serve efficiently as crystallizing media for silicates and particularly for oxides. It is conceivable then, that in the cones in question, the iron oxide, present in considerable amounts and in a finally divided condition, forms rather large crystals on prolonged heating, if the cone contains boric acid also, which crystals then enter difficultly into reaction with the remaining materials, and they also contribute to the formation of a strong outer shell. When such is the case these low cones, if they have been heated for a considerable time, exhibit not only a higher deformation point, but also following complete melting are colored dark red especially on the apex and edges, by the unchanged iron oxide, while the cones not previously biscuited form brownish slags.

In consideration of the above circumstances it no longer seems remarkable that cones 010 and 09 in the muffle, with its proportionate quicker heating, melted 30-40 deg. lower than in the finishing fire of the porcelain kiln. On longer heat treatment in the biscuit kiln they melted up to 60 deg. higher than in the muffle. Burn VII₂ shows the only exception since in this, the temperature rose more quickly than in the other porcelain burns.

In a similar way are explained the other differences in deformation points under different burning conditions, especially under different rates of heating. The reason for the unusual coincidence of the deformation points of cones 05 and 04 in burn IV, and IV₂ is now clear, if we take into consideration the rate of heating during these burns. The temperature was held constant for a considerable time at a point corresponding to the deformation point of cone 05, the result being that cone 04 softened to the extent that it finally deformed without an increase in temperature.

For similar reasons, in most of the burns, the deformation points of cones 01-3 occurred very nearly or exactly together. It is difficult to explain the high deformation point of these cones in burns V and VI₂; however, the method of firing and the degree of oxidation of the iron play an important role.

The increase in deformation point of cones 1 and upwards, on longer heating, is not so marked as for the lower cones 010-01. However, there is not an excess of fluxing materials in these cones, alumina and especially silica being present in considerable amounts. It is well recognized that the viscosity of aluminum silicates high in silica decreases only very gradually with increasing temperature and their melting points are consequently high. Such silicates become softer at a lower temperature on long heating than on sharp heating.

Table 3.

I Cons.	II 1	II 2	III 1	III 2	IV 1	IV 2	IV 3	IV 4	V 1	VI 1	VI 2	VII 1	VII 2	VIII 1	VIII 2	IX 1
010a	930	945	930	960	945	910	....	....	....	....	....	910	....	930	950	....
09a	935	950	950	970	955	955	960	945	....	950	....	....	....	955	960	960
08a	985	970	960	975	955	....	....	....	....	....	920	980	975
07a	990	1000	995	995	....	....	....	....	....	940	1000	995
06a	1030	1025	1020	1015	1010	....	....	....	....	....	960	1020	1015
05a	1050	1045	1060	1055	1045	....	1030	....	....	....	975	....	1025
04a	1070	1065	1090	1085	1100	....	....	....	....	....	1010	....	1040
03a	1085	1075	1090	1095	1105	....	....	....	....	....	1060	....	1065
02a	1100	1105	1085	1095	....	1100	....	....	....	....	1075	....	1090
01a	1115	1110	1095	1095	....	1145	....	....	1080	....	1085	....	1090
1a	1125	1135	1125	1140	....	1110	....	....	1110	....	1095	....	1115
2a	1135	....	1130	1145	1135	....	....	1140	....	....	1105	....	....
3a	1155	1170	....	1150	1135	....	1190	1160	1130	....	1110	....	....
4a	1155	1180	1165	1150	1150	....	1210	1180	1170	1145	1125	....	....
5a	1160	....	1170	1160	1155	....	1215	1200	1190	....	1140	....	....
6a	1190	1170	1160	1160	1220	1210	1195	1165	1150	....	....

The relatively high deformation points of cones 2-6 on quick heating are best shown by the heating curve of burn VI₂.

Since cones 08-1, biscuited in a porcelain kiln were also heated for a very long time below their deformation temperature, they deform at a higher temperature than the analogous cones not so biscuited. These differences were the greatest from cone 08 to 04, as the table given below shows. The cones were melted down in an electric furnace of the Heraeus type, the temperature rising from 3-4 deg. per minute.

Cones	Raw	Biscuited	Increase in Deformation Temp.
08	1025°	1055°	30°
07	1040°	1070°	30°
06	1070°	1105°	35°
05	1095°	1115°	20°
04	1115°	1130°	15°
03	1125°	1135°	10°
02	1130°	1135°	5°
01	1140°	1145°	5°
1	1150°	1160°	10°

4. Cones 010-6a.

As is well known, the new cone series 010a to 6a differs from the old series 010-6 chiefly in that the new cones from 010a-3a contain no Fe₂O₃ and have as a new constituent, magnesite.

The new series has the advantage that it is not so sensitive to the composition of the flue gases as the one containing iron.

Table 3 gives the deformation points of cones 010a-6a. The different burns from II to VII are designated in exactly the same way as given in table 2; VIII signifies a burn made in a porcelain kiln, while IX indicates a burn made in a small sharp fire muffle of 1/12 cubic meter content.

In general it seems to be the rate of heating that produces the variations in the deformation points, and these cones, especially the lower ones, on long slow heating have a higher deformation point acting in this respect similarly to the old series and for the same reasons. The deformation points of the higher cones, from 1a and upward are lowered by this treatment. In the instances where cones of different numbers deformed at approximately the same temperature as 04a-01a burn IV, or 3a-5a in burn III, or 03a-01a and 1a-4a in burn IV₂, the temperature was held practically constant for a considerable length of time.

In order to further show the dependence of the deformation point on the rate of heating, the deformation points of cones 010a-6a were determined in an electric furnace, the temperature being raised about 4-5 deg. per minute, the following values being obtained:

Cones	Deformation Temp.	Cone	Deformation Temp.
010a	945	02a	1090
09a	965	01a	1115
08a	980	1a	1135
07a	1000	2a	1165
06a	1015	3a	1190
05a	1055	4a	1205
04a	1060	5a	1215
03a	1075	6a	1220

Further, cones 08a-1a were biscuited in a porcelain kiln where they experienced a long slow heating at a temperature below their deformation points. After this treatment they showed a matt surface of a de-vitrified appearance. These biscuited cones were now burned together with the analogous raw cones in an electric furnace, Heraeus type, the temperature increasing 2-4 deg. per minute and the following values obtained:

Cones	Deformation Points Raw	Biscuited	Increase due to biscuiting
08a	985°	1010°	25°
07a	1000	1025	25
06a	1010	1040	30
05a	1040	1065	25
04a	1060	1090	30
03a	1075	1100	25
02a	1090	1125	35
01a	1120	1140	20
1a	1135	1150	15

After the cones were down, the ones, which had been biscuited, showed a matt surface and the sharp edges could still be recognized, while the cones not so treated deformed completely, the cone losing its shape entirely.

As the above values show, cones from 07a-01a deform from 15-35 deg. higher if they are previously heated for a considerable time at a temperature below the deformation point. This investigation proves the dependence of the deformation point on the rate of heating.

Obviously, the relation of the deformation points of analogous cones in the old and new series will vary somewhat in different kilns under different conditions. The following table gives a comparison of the deformation points of the two series as found by Rieke, but of course the relation between the two is not absolutely fixed:

Old Cones	New Cones	New Cones	Old Cones
010	about 010a	010a	about 010
09	about 09a-08a	09a	under 09
08	about 07a-06a	08a	about 09
07	about 05a	07a	about 09-08
06	Somewhat over 04a	06a	Somewhat under 08
05	Somewhat under 03a	05a	about 07
04	about 02a	04a	Somewhat under 05
03	Somewhat over 02a	03a	about 05-04
02	about 1a	02a	about 04
01	about 1a-2a	01a	Somewhat over 03
1	about 3a	1a	about 02
2	about 3a-4a	2a	about 01
3	about 4a-5a	3a	about 1
4	about 5a-6a	4a	about 2-3
5	Somewhat over 6a	5a	about 3-4
6	about 6a-7	6a	about 4-5

5. Cones 5-17.

Hoffman has determined the deformation points of these cones, both in an iridium furnace, the temperature rising 5 deg. per minute, and also in kilns of the fire brick industry with a correspondingly long rate of heating. The values found in the commercial kiln are in every case lower than those determined in the small laboratory furnace. The following table gives his results.

Cone	Deformation Point in Iridium Furnace	Deformation Point in Commercial Kiln	Difference
7	1285°	1180°	105°
8	1305	1200	105
9	1335	1225	110
10	1344	1235	110
11	1360	....	...
12	1375	....	...
13	1395	1315	80
14	1415	1373	40
15	1435	....	...
16	1460	1405	55
17	1485	1410	70

In general, these values check those obtained by Dr. Rieke. The deformation points found by him in burns IV and VII, on very long heat treatment approximate those obtained by Hoffman in the commercial kiln, while the values, obtained in the other hard porcelain burn where the rate of heating was faster, are as much as 60 deg. higher but in most cases still lie below those obtained in the iridium furnace, as the table below shows.

Table 4.								
Cone	IV			V	VI	VII		
	1	2	3	1	1	2	1	2
6	1170°	1160°	1165°	....	1205°	....	1165°	1165°
7	1175	1165	1180	1220°	1220	....	1175	....
8	1210	....	1240	1240	1240°	1190	....
9	1240	....	1260	1275	1285	1230	....
10	1260	....	1280	....	....	1235	....
11	1270	....	1300	....	1300	1270	....
12	1340	1280	....
13	1325	1375	1295	....
14	1370	1390	1415	1330	....
15	1410	1410	1420	....	....

In a further burn cones 6-10 were heated for a longer time between 1160-1180 deg. After ¾ hr. cone 6 began to bend and after 1½ hrs. was completely down. After 2¼ hrs. cone 7 followed, and 5 minutes later cone 8 fell. After 5½ hrs. cone 9 was bent somewhat and glazed, but cone 10 still stood perfectly straight.

This showed that without further temperature increase, and only by influence of long heating, cones 6a, 6, 7 and 8 can be made to fall one after the other and at a tem-

perature which was as much at 125 deg. lower than the deformation points found by Hoffman in the iridium furnace.

As a summary of all the foregoing work, we can briefly say in conclusion:

(1) Values obtained in different kilns show that the deformation points of cones 022-15 are dependent more or less on the rate of heating. This is the most important factor affecting the deformation point.

(2) Under similar conditions the individual cones deform at approximately the same temperature, and always in consecutive order, provided that the cones are not set directly into the influence of the bare flame or similar unusual conditions.

(3) While the lowest cones deform earlier on long heat treatment than on quick, the higher cones from about 012a and upward to about cone 1 become more refractory, due to the formation of more refractory compounds on their outer surface.

Further, it is not possible to use in a second burn such cones as have not melted down in a previous burn.

(4) From about cone 1 upward the cones deform at

a lower temperature on long heating than on quick heating; these differences, as Hoffman shows, can amount to as much as 60-100 deg.

(5) The deforming temperature of a Seger cone is not of absolute fixed value. Seger cones can only be used for direct temperature measurements where the deformation points of same are known for conditions which can be exactly reproduced, as for instance in an electric furnace where the rate of heating can be controlled. In all other cases the temperature measurements, by the deformation of the cone, are very approximate.

Value of Seger Cones.

Seger cones are of value in the burning of ceramic wares, because they show the effect of the important factor time as well as temperature. There are other devices for measuring temperature, such as optical and thermo-electrical pyrometers, but these take into account only the temperature, not being affected by the time element. Such devices are only of value then in burning ceramic wares when the duration of the burn and the rate of heating are always the same.



DISPLAY EXCEEDS FORMER EFFORTS.

Annual Exhibition of Pottery Brought Out Many New Dinnerware Patterns.

The annual exhibition of domestic pottery, which was arranged in the large sample rooms of the Ft. Pitt Hotel, at Pittsburgh, during the month of January so far exceeded previous efforts in displays of this character, as to leave no possible chance for comparison.

Not only have the art pottery manufacturers brought out new bodies and glazes, but the domestic pottery manufacturers have made a decided improvement in the class of the body of dinnerware, in glazes and last, but not least, in treatments.

The Mayer China Co., of Beaver Falls, Pa., has just started the manufacturing of American china dinnerware, which is admitted by many ceramic critics to be quite the superior of a lot of china dinnerware which is being imported.

Gold monogram incrustation is admitted to be the highest character of dinnerware treatment that is to be had, and yet this same treatment is being produced by American manufacturers, today, on a line that is far and away ahead of any of the imported treatments. The latest coin gold treatments are being displayed this season.

The Pittsburgh pottery exhibit is producing a large volume of new business, for buyers have been going to that market from all parts of the country.

The salient topic among pottery manufacturers this month has been the hearings before the Ways and Means Committee at Washington, D. C., on the pottery schedules.

It is generally admitted by both politic and manufacturing sides, that the pottery schedule will not be tampered with.

Chairman Underwood, the master mind of the Ways and Means Committee, in an interview, emphasized his belief that the pottery industry is on a truly competitive basis and that such a condition would seem to justify keeping up the existing rates.

"I can't, as a matter of policy," said Mr. Underwood, "go

very much further today in regard to the pottery schedule than I did the other day. What I say is not necessarily conclusive because the question has not got beyond the hearing stage and there will be nothing positive until the committee can go into conference. We were favorably impressed with the facts presented at the pottery hearing by William Burgess, first vice-president of the United States Potters' Association.

"The facts presented, in my judgment, indicated that the products covered in these schedules were very clearly in the competitive class. Where an article is in the competitive class there is ordinarily no reason for a change in the rates. It is different from the case of other products that are without effective competition, such as sewing machines."

January Business Breaks Record.

Never in the history of American pottery production have the manufacturers been favored with as much business during the month of January as they have this year. The surprising feature of the trade is that those large jobbers throughout the country who have in past years bought foreign ware almost exclusively are diverting their business to American channels. In some respects, this condition was not anticipated by the manufacturers, although by others it was looked for.

The foreign pottery manufacturer has increased the selling price of his goods, and the ocean freight rates are higher. This has worked hand in hand with foreign labor troubles to the benefit of the domestic manufacturer.

Jobbers who never before bought any domestic pottery came into the market at Pittsburgh and East Liverpool, during January, and bought liberally of the best patterns that were to be had. With these new accounts and increased business from old customers, every pottery manufacturer in the country is now operating his plant to the limit.

It is understood that a new pottery is to be built at Mt. Clemens, Mich., for which a bonus is being raised.

HOW TO REMEDY PRESENT CONDITIONS

In Paper Read Before Iowa Brick and Tile Association, Secretary Platt Points the Way to Satisfactory Solution of Difficulties Now Confronting the Industry

The causes which have brought about present undesirable conditions in the clay industry were ably discussed by Mr. Platt and some remedies suggested.

Present low prices are not adequate return for the capital invested and labor required in turning out first-class products.

According to Mr. Platt, stricter cost accounting and more co-operation along publicity lines are among the most needed reforms.

His paper is full of "meat" and should be read carefully by every one interested in the future of the clay industry.

By C. B. PLATT



IN these days of high costs, applying both to the producer and the consumer, the purchasing public does not seem to be attracted by cheap things. The want creates the demand, and a low price seems to have little effect in creating a want. A manufacturing industry which produces under high cost conditions and seeks to build demand by low prices, is not working under scientifically economic conditions, to say the least.

In the clay industry, the condition has prevailed for some time, where the cost of production has risen and the selling price declined. Low prices for a manufactured product are only economically possible under low production cost conditions.

From the fact that the ranks of the clay products manufacturers are being added to every year from the ranks of the professions and other lines of business, it is evident that the word has gone out that the clay industry is a high dividend-paying industry and one in which the unskilled can make good without trouble. Clay products manufacturers have not fully relieved themselves of such first impressions, that there is always a margin of profit to figure on.

Taking the proposition in the rough, it does figure out a good deal like a two or three hundred per cent profit proposition. The clay costs little or nothing, since \$1,000 worth of shale land will make millions of brick or tile; \$20,000 invested will turn out 20,000 brick daily. Twenty men will make 20,000 brick. There are 300 good working days in every year. Say we are liberal and allow the men \$2.50 per day, that's \$50.00; coal is \$25.00 more; that's \$75.00. 20,000 brick at \$7.00 to \$8.00 amounts to easy \$150.00. Who cares for expenses?

We do not need to bother regarding the truth of the statement that 50 per cent of the clay investments are unsuccessful but experienced men do know that 75 per cent do not come within 25 per cent of their expectations. In some unaccountable manner the pencil and paper profits figured before the experience of a year's run are strangely and unaccountably given the lie by the altogether practical and unfeeling "Profit and Loss Account."

We do not know how to count costs as well as we know how to estimate cost. In counting costs, we must consider the effect of our acts as well as our legitimate expense in the manufacture of our ware. It would be a hard matter indeed to locate a manufacturer who would consider for a minute continuing any operation which he knew would result in an added cost of 25 cents per ton on his ware. He would

sit up night to combat it and he would spend hundreds of dollars in fighting his individual rights in keeping down this added cost, which is vital to his continuing in the business, yet he will, apparently without thought and with no effort to investigate conditions in any way, promptly meet a price cut of \$1.00 per thousand on 4-inch tile or common brick and laughingly say, "I can stand it if the other fellow can." This is a frame of mind in line with the first idea gained of the business before he went into it. "There is so much profit in the clay business that this cut can be endured without trouble," and away goes the price level. Now again, supposing the loss endured by a cut of 25 cents per ton were proposed as an assessment to promote

demand for building materials and tile. It would be immediately considered as an expense that could not possibly be endured unless the result was practically beyond question of being profitable.

Nowadays there is much talk regarding the importance of cost figuring and much of it is indulged in to the sorrow of the experimenter. "A little cost figuring" is a dangerous thing. It can not be denied that cost figuring is apt to be misleading, because it is apt to be too largely estimates. It would hardly be safe to advise a general use of a cost system carried on through monthly operations, as a base for figuring margins of profit and consequently a basis for price quotation. About the most benefit derived from a cost system, maintained at some expense throughout the year, is its value as to the profit yielding of a certain product, or the necessity for an improved appliance or machine, or generally improved methods. It is a guide to the manager of the factory but not a safe guide for the sales manager.



C. B. Platt, Sec. Iowa Association.

The sales manager must have recourse to a more reliable source of information than the factory cost estimate, or he will injure the dividends of any plant. Cost to him must be the absolute profit and loss account balance, and this account must be one of a complete system of bookkeeping, which takes into account every item of cost encountered throughout the year. The profit and loss account, when charged with the invoice on the first of the year; with all the interest paid out and all the interest on the investment; with 10 to 20 per cent depreciation on the investment account; with appliances and improvements added which can not be considered as permanent; with the time value of the managing owner if he is not on salary; with all wages and salaries; with fuel accounts; with all expense of whatever nature and with taxes and insurance, and credited with the invoice at the close of the year and all the net sales, the balance shows the absolute profit or loss of doing business and is the only absolutely dependable cost basis from which to figure safe selling prices.

As before remarked, a little of the cost system experimentation is a dangerous thing. One of its deceptive lines is found in some well developed truths regarding the effect on cost, in increased production and steady running. In practice it is found that both of these methods of reducing costs are difficult and expensive to attain. To maintain capacity ratings of machines, means additional labor over what is required to get the average maximum capacity of the machinery for five or six hours of each day and it means additional drying room and additional kiln room. Increased capacity means often an entire remodeling of the plant and a much greater proportional investment per thousand brick or tile over and above the capacity of the former plant. So with increased capacity it becomes even more vitally essential to maintain a regular run, or full time, than in the case of the smaller capacity plant.

To increase capacity, either by greater efficiency in installed equipment or through larger capacity equipment, throws an additional burden upon the sales department and added expense of course.

Sales Department Must Be Properly "Backed."

The sales department must have added equipment as the plant crowds it. It must be assisted by a more scientific consideration of the market, which often means men in charge who command much larger salaries and who must be further aided by scientific advertising or business building methods. After careful thought (which is counting the costs) it does not appear as good business to equip an expensive plant for turning out large tonnage with the idea of reducing costs and then attack the market with a raking fire of low prices, cutting the former price level, maintained under smaller capacities, more than is gained by the reduced cost of production.

The really astute manager meets this thought with another. "Oh, yes, I know that my margin is smaller than under the low-capacity and high-price level, but I multiply this small margin and make more dollars with my large capacity and small margins." This is true to a degree but others are figuring the same way and capacities in the aggregate soon pass the demands of the uneducated market and these established low price levels are forced lower and lower and soon all chances for profit disappear and the great investments, unsupported by profitable operations, become practically worthless and various managers pass into the class of the great unemployed. This is the history of manufacturing. In other lines than clay, it has been again and again demonstrated. Going back into the history of over-developed and improperly managed industries, we find that when the point was reached where it was found impossible to conduct that particular industry with profit, the "trust" idea was developed and the

warring members were assembled into one great organization; heavy overhead expense was reduced by cutting out ineffective sales organizations, and overpaid salaried officers; and closing down plants which were poorly located and badly arranged and equipped. Live selling plans were inaugurated and the industry placed on a paying basis without raising prices above the level found to be ruinous under a war conducted by immature business men. This method has been decided as bad for the "interests of the public" and is now quite unlawful.

Producer Not Given Fair Show.

Lawmakers seem to consider the "public" as Board of Trade members consider the speculators, or as buyers. The producer, though being the medium through which the public secures employment, is combined against at every quarter. He must submit to combinations and cannot combine. He must enter into a condition named as free competition, which means nothing more or less than war. He has his candle lighted for him at both ends and if he seeks to preserve it by wrapping the middle with asbestos, his light goes out. Yet, there seems to be no reason for complaint because these things are supposedly for the good of the greatest number. It is not, however, for the good of the public that any industry be conducted at a loss, for the public must pay the bill at some turn of the road and the burden comes upon it eventually, if in a roundabout manner.

Every manufacturer has the right to place a minimum price upon his product which he will not go under. We can, I believe, agree not to give our product away or to sell below cost. It is next to impossible to say just what the cost of our ware is, as an average proposition, so the margin of safety must be a matter for careful consideration. Here, then, is the point where we must consider our acts as individuals as important in consideration as a factor in costs. Our only means of defense is individual consideration of the industry as a whole. In this consideration we must not act too hastily against the improper and poorly considered plan of any other member, when by stress of circumstances which to him seem vital, he attempts to better conditions by calling lower prices to his aid in the hope of bolstering up his demand. We have absolutely no protection against ourselves or against the poor judgment of one of our members, excepting a willingness to treat each other fairly and honorably and to consider the industry as one in which we as individuals have no patent or individual claim.

If we can not bring our minds into such a state that we can believe in each other, we can accomplish nothing by meeting together and talking over conditions which prevail in the trade.

Association Useless Without Co-operation.

This is an association of honorable men bent on giving their customers a fair deal or it is a farce that is not worth while.

This is an association of men who know that they have not the power to control the market, to drive others out of it and make a profit for themselves, or it is worse than a social club of children, as a consideration for grown men.

Iowa clay products are widely scattered and each manufacturing district has a number of financially strong concerns. None of these can say it has a territory all its own, because all work under a fixed freight tariff and territories overlap, so none is independent of the others.

It is easily seen what would happen to any concern with a single location, that should attempt to control the business of the state. It could not be done with a capital of \$5,000,000 in the hands of the most wise of managers. What would happen to such a concern would happen to any concern impressed with an overpowering belief in its ability to control

the business of any district. We could imagine a condition wherein a man possessed of five or six millions of dollars invested in economical plants over fine deposits of shale, so distributed over the state that these plants could reach any Iowa point without exceeding a rate of 5 cents per hundred, and such a condition only would place within the hands of any one concern the power to play a lone hand and make a winning. Even such a concern would have a hard time against an established industry bound together by the ties of real association.

We do not like to consider such competition. We do not like to consider war in our own ranks and why should we? Why even contemplate "showing" any one what we can do in low price making and still keep out of the hands of the receiver? Why contemplate anything but harmony? Why not believe in each other and act, each one, so that all are worthy of confidence? Why not work together as one man, counting our acts as we would were the entire investment now employed in Iowa clay plants under our own stewardship?

One of the things which this industry is neglecting to take advantage of, and which has in it a greater advantage than any other one thing we can conceive of, is the idea of association work. We have indulged in associations and developed a considerable momentum in the pleasurable side of associations but we have practically overlooked the greater benefits to be derived from the association.

Association Should Be Valuable Asset.

Every clay products manufacturer, wherever he may be located or whatever the size of his plant, should attach himself to some clay products association and see to it that the association he joins is made an effective part of his business organization. If the association he joins fails to respond he should consider it as a secondary association and look up one more active and more calculated to become one of his most valued assets.

That the Iowa Brick and Tile Association has been a valuable association there can be no denying. It has probably accomplished as much as any other state association, yet as it stands today, ready to advance, it demands that it be given new life by the efforts of men who are determined to make it of value to all engaged in the industry and of value to each individual member.

It is not reasonable to suppose that this organization can be made effective unless all join in and make it so. No one can afford to stand by and wait for others to go ahead and make it effective, with the reservation that he will join in when it is made so. If the association becomes of much lasting good, no individual can well escape the responsibility of helping it on its way.

Industry Faces New Conditions.

This industry faces a condition which is vastly different from conditions confronting it years ago. Manufacturing difficulties have been largely solved and when one is met with it is not put off until the next convention for the purpose of learning from others how to overcome it. There are means for solving every difficulty, immediately at hand, and in this respect our association work is taken up through other sources of information, perhaps more effective and much more available. From an industry which furnished practically all the materials for permanent buildings and one free from competition, excepting in local competition of the same sort, and an industry not fully developed, it has come to be an industry over-developed and brought into competition with other building materials, offered by men who are impressed with the advantages of publicity as a means of creating a demand and diverting the demand from brick or clay products to cement.

Clay products have become overproduced not because the uses for them have not correspondingly multiplied but because the public has not been made acquainted with the fact that there is no satisfactory substitute for clay in building and drainage work. It has been extensively advertised that cement construction is cheap; that it can be handled by unskilled labor and that with it, operations can be hurried to completion much faster than with brick. The public believes this because it has been told so in a convincing manner, and unfortunately, many of the clay products manufacturers believe it also and to meet this competition they have set out to make clay products as cheap as cement products, without combating the claims of the cement men, claims which have been demonstrated as untrue. This method has served to add to the belief of the consumer that in cement they have a wonderfully cheap building material. They reason, "if the clay people do not combat the claims of the cement people and war with each other in prices, clay products manufacturers are on the run and are trying to induce us to use an inferior material at a greater expense."

The public is interested in what others are doing, particularly when others are following some new and widely advertised idea. One builder is very greatly interested in the experiments of another, particularly if the experiments are supposed to be very profitable, and what one does many others follow closely. Every cement hoisting tower, adjoining a building under construction, is an advertisement for cement construction and has its effect on every other prospective builder just as long as he believes cement is a cheap building material and consequently every builder will use as much cement as he can in any building he is building, to the exclusion of brick or other clay products, which the cement people have been diligently educating the public to believe is an inferior and more costly building material.

Publicity the Remedy.

I quote from a paper prepared and read by John B. Rose, a prominent brick manufacturer of the Hudson River district. He says, in part:

"Publicity is the only thing which will meet present day conditions. We know that we have a material which is the best. Why not let the world know it? Millions of dollars are spent yearly in advertising destructible products, while we have thought so little of our product that we have hesitated to make known its good qualities. Do you know that concrete construction is not indestructible? Do you know that it is not inexpensive construction? Do you know that except in small, cheap and criminally unsafe structures, concrete buildings can not be built as quickly as brick? What, then, is there about concrete construction which has given it such an impetus throughout the country? Why do you see a vast amount of concrete construction in many towns through our states, if it is not cheaper, if it is not indestructible, if it is not fireproof, if it takes longer to build a house of concrete and if it is criminally unsafe—why has its use grown greater day by day? Why has the cry, "Cement is King" been taken up? Why such articles as those in *The Outlook* of February 17 and *The Spectator*? There is only one answer—Publicity. And think of the opportunity we have. Here are concrete dams giving way; concrete buildings falling down; concrete bridges caving in; and all around us, on all sides, life and property destroyed because of the criminal use of concrete. And what use have we made, as an industry, of this ammunition which has been placed in our hands? Of what use do you think the concrete interests would have made of such ammunition? If through the use of an inferior quality of brick one house should fall, it would be flashed from one end of the country to the other, and the world would have been terrorized into the use of concrete."

There is much in Mr. Rose's article or paper to prove that cement is inferior to clay products, that it is unsafe, more costly and that it requires more time to build with cement than with brick.

I want to say right here that anything which we do or

anything which we fail to do, which immediately or eventually reduces the demand for our product, or lessens its selling price, is the same thing in result, as an added cost, since it subtracts from our margin of profit.

Bright Future for Clay Industry.

I am much inclined to be optimistic regarding the future of the clay products business. Why not? We have the very best of materials in the world, for building and drainage purposes. Our country is prosperous—wonderfully so. Our farms are the best in the world. Our cities and towns are growing. We are a prosperous progressive nation possessed of the garden spot of the world. We are in the center of all that is worth while. Our transportation facilities are wonderfully developed. Our tendencies are toward conservation. The building world is awakening to the necessity for and the great advantage in permanent or fireproof construction and our people are determined to have good hard surfaced roads. Money is plentiful. Everything is moving forward. Prosperity is in evidence everywhere. Again, we have the best material, the only reliable material with which to construct this new permanent line of improvements now being considered as the only kind worth while. Our field is practically unlimited. Our material is not only the best and most indestructible material but it is the cheapest to use, and cheapest, too, when we, the manufacturers, ask for it a price which will return us a fair margin of profit. I ask you to think for a minute of the wonderful resources of our markets; not of how you can secure some business that is already headed in toward your neighboring plant, but of the greatness of the business which is available at your very doors and which is being secured by the sales agencies of other materials, greatly to the disadvantage of the consumer.

Think of the Iowa farm. It is made up of acres worth from \$100 to \$250. Its value is rapidly increasing. It is wonderfully prosperous. Consider this value attached to the average Iowa farm and then consider the nature and class of the average farm improvement. There is an economic question confronting the Iowa farmer: He can no longer afford to let his fields (any of them) nor his orchards go undrained. He is ripe for conviction that it would be profitable for him to drain—and to thoroughly drain. Not one farm in one hundred is thoroughly drained. Look at the average residence on the Iowa farm. It is not modern, it is not satisfactory to its prosperous owner. It will soon give place to a modern structure. Think of the barns which must be built; of the corn-cribs, the chicken houses, the hog houses, the shelter sheds, the silos and the numerous other buildings which must be built and replaced. These are the fixed improvements on the most valuable farming lands in the world. Is there not a strong argument to advance why these buildings should not be inflammable and otherwise perishable? Every building on the farm and in the country town can be better and more cheaply constructed of hollow clay building tile than of any other material. Not one in ten of the builders realize this fact nor do one-half of them really appreciate the advantages, comfort and economy in a permanent building.

Must Be Kept Before Public.

How are we, the manufacturers of this ideal building and drainage material, going to put this question of permanent improvements before the Iowa farmer and the builder in the small towns? How are we going to convince them that they are losing money when they overlook using our clay products? Shall we continue as we have, convinced but not convincing? We can not perhaps accomplish the desired ends within a few weeks or months, nor by telling people by word of mouth, but we can make this the "Age of

Clay" and bring about the change quickly if we work for it unitedly.

I want to call your attention to the fact that I will be followed by Mr. Iverson C. Wells, editor of "Brick and Clay Record," Chicago.

He will present to you a definite plan. A first step which if taken and followed by others in the same direction will soon bring us an organization that will work to our good and the good of the public. That is all we, as an industry, need. To get clay products before the consumer; to educate the consumer, and to make him a greater consumer.

BRICK MAKERS USE PARCEL POST.

Sample Brick by the Ton Already Sent Out by Enterprising Firms.

While it has been somewhat of a question among brick makers as to the adaptability of the parcel post for sending brick, several enterprising firms, seeing the advantage of the system from an advertising standpoint, quietly made arrangements to avail themselves of the opportunity afforded and on Jan. 1st had their samples ready to send out.

The Barber Asphalt Co., Des Moines, Ia., was one of these "live wires," and two hundred and fifty brick weighing nine pounds each were mailed in separate packages, the consignment weighing over a ton.

The brick were not wrapped, the label being pasted directly on the brick and the stamps attached to the label.

Many of the parties receiving the brick exhibited them in their windows, thus creating considerable interest.



A Portion of the Parcel Post Consignment of Brick Which Put the Gary, Ind., Post Office Employees to Rout, Jan. 1.

It will be remembered that H. Pyffe Parry, of Gary, Ill., also shipped a large quantity of sample brick on Jan. 1st. His samples were packed in pasteboard boxes and tied with strong twine. He sent out a special letter with return post card, and states that in a large majority of the cases replies were received.

The parcel post rate shows a saving of from 5c to 18c a sample, and with the proposed revision of the law, allowing an additional increase in weight, the expense of sending sample brick will be much reduced.

Not the least of the good results already shown is the action of the express companies in reducing rates on sample brick in many instances.



VALUE OF DRAINAGE IN DRY SEASON.

Figures Show Drains Produce Dividends Even in Exceptionally Dry Years.

It has frequently been argued that drain tile was useful only in wet seasons or in swampy land, but data collected by the Department of Physics at the Ontario (Can.) Agricultural College conclusively show that during the exceptionally dry season of 1911 land that was under-drained produced on the average about \$16.50 more per acre than land that was not drained.

Reports were received from a large number of farmers, of whom twenty-five were able to give definite figures on yields on drained and undrained land. Three of the number said they saw no difference, but all the others reported increases. Eleven counties were represented in the reports, from Durham in the East to Essex in the West. The value of increases, including straw, was figured at October, 1911, prices, and March, 1912, prices. The former showed an average of \$15.97 per acre and the latter \$17.04, and both together an average of \$16.50. The three who reported no increase were counted in obtaining the averages.

In wet seasons the results are even more marked, but even at \$16.50 per acre, drains more than pay for themselves in two years.

OPENINGS FOR CLAY PRODUCTS.

In Letter, A. O. Anderson Points Out Some Opportunities Now Being Neglected.

Ames, Ia., Dec. 16, 1912.

Editor "Brick and Clay Record": I noticed in the Dec. 1st issue of your journal the article on the "Drain Tile Investigations in Iowa." I appreciate the favor you have done me by the publication of this, but I desire to correct one statement you made in the introduction to the effect that it was "published by the state," which is not the case, as the "Iowa Engineer," from which it is taken, is an organ of the engineering students of the Iowa State College and to whom credit should be given. You will no doubt be able to do this in your next issue.

The use of proper materials in cement use and a knowledge of the correct method by which concrete should be prepared is no doubt of as much interest and importance to clay manufacturers as to others, so they will no doubt like to hear Mr. Gaden's talks along this line as well as the farmers of Iowa when the cars of the Extension Department of the Iowa State College (not the University) tour Iowa this winter, even if thus the "Cement Men Score One in Iowa." As a suggestion, the clay men could score several if they would pull together and send a man along to talk silos, drainage, etc., but since they don't—why, the state of Iowa usually provides an expert or two to travel with the train who can talk silos and drainage, but, of course, in these subjects he cannot limit himself to the clay product, but also tells of wood and cement as being suitable materials of construction.

Recently I made a trip through Southern Iowa and Northern Missouri and saw thousands of acres of wet land which ought to be reclaimed by tile drainage. It is

just a matter of time before this is done, and it is up to the drain tile manufacturers whether or not the present plant owners will get the drainage movement started or leave it for some other generation of tile manufacturers. The latter is dangerous, for if by chance the cement tile drains of Northern Iowa have not failed by the time this country begins drainage it is very likely that the competition will be much keener than it is today.

The use of hollow blocks for the construction of large sewers and drains is of growing importance, and I think a write-up, giving details of construction, cost, places where used, durability, etc., of this type of construction would be of general interest.

Respectfully,

A. O. Anderson.

ALKALI MAKES LAND WORTHLESS.

Iowa Tilemaker Wants Information as to Flooding It Out. Can Any of Our Readers Tell Him?

I would like very much to ask a question through the columns of your paper, and hope some one can give me the information desired, as it's a question that may interest others in the same way it will me.

I have a piece of land in the state of Oregon that is under the ditch and can all be irrigated in good shape, but part of this land contains so much alkali it will not produce anything but wire grass. I would like to know what can be done to make this land produce crops.

Could this land be well tiled out and then flooded well two or three times with water and would this flooding with water wash out the alkali so that the land would produce crops? The alkali in this land is what is locally known as black alkali and the land is of no value on account of its barrenness.

On the other hand if it were not for the alkali the land would be worth two hundred dollars per acre, and the question now is how can this alkali be removed from the land? If any of the readers of "Brick and Clay Record" can give me any information on this subject I will thank them very much, as there are thousands of acres of land that could be made very valuable, if the alkali could be gotten rid of.

Iowan.

IOWA CONCERN FILLING BIG ORDER.

Seven Hundred Freight Cars Needed to Deliver Large Sized Tile.

Faribault and Martin Counties, Minnesota, are now laying one of the most extensive farm land drainage systems in the United States, if not the largest in the entire world. Two thousand miles of tile are to be used in this great project and more than 500,000 feet of large sized tile is being furnished by the American Brick & Tile Co., of Mason City, Iowa. To deliver these tile, it will be necessary to use 700 freight cars.

Having two large plants with an annual capacity of four to five thousand carloads of tile at its command, the company will experience no difficulty in filling the order. In addition to drain tile, this company also manufactures fireproof brick, common brick and wire cut building brick made from shales.



USE FURNACE SLAG AS GROG.

Well-Ground, It is Said to Be a Valuable Addition to Moderately Fat Clay.

The addition of finely ground blast-furnace slag to an ordinary clay of moderate fatness is said to be a simple means of producing an excellent vitrified ware suitable for stoneware and paving brick and tile. A writer in a foreign journal says that the slag, being in the form of a ready-made frit, acts as a very energetic flux, and one which is not damaged by prolonged storage. The iron compounds and other coloring agents in the slag are, he says, not usually objectionable, as the color they produce is an agreeable gray. The slag must be ground very fine as the particles are somewhat sharp and may form unpleasant specks if insufficiently ground. If the slag is bought in a coarse condition it should be crushed in stonebreakers, followed by a ball mill.

QUESTIONS AND ANSWERS

Here, Knotty Problems That Confront Puzzled Readers of Brick and Clay Record, Are Unraveled by Experts

49, Missouri.—*We are having trouble with our stiff-mud pressed brick. They break so badly, while drying on the yard, as to almost destroy the profits. We burn them very hard, but still they are very brittle. We are using the old-fashioned kilns. The clay has just enough sand in it to make it mold well. We would be glad to get some pointers for overcoming the trouble.*

In regard to the troubles of "Missouri," we hesitate to give any opinion whatever because the data is not sufficient.

Brick break from a number of causes and one cannot tell at long range just what the cause may be. Clays are very uncertain in behavior and any one who gives an opinion of a material, or an explanation of a trouble, without knowing the material and investigating the trouble, is merely guessing or at best assuming the clay to be of a certain class and the trouble to have a certain cause. Based upon this assumption one gives an opinion, but it may not at all fit the specific case.

Brick oftentimes crack and break in the burning and the fault is attributed to the burning process, to the kilns perhaps or to the carelessness of the burner, when it may be that the trouble did not belong to the kiln at all. It may have been the quality of the clay, it may have been due to machine troubles introducing weaknesses into the brick, or the trouble may have originated in the dryer and only became apparent after the product was burned, yet, on the other hand, there are troubles which begin and end in the kiln.

The trouble in the dryer may be due to the type of the dryer, to the drying behavior of the clay or to the machine. By changes in the clay mixture we can frequently overcome difficulty in the dryer without any change in the dryer, and frequently we can improve the machine structure of the brick and overcome the dryer difficulty, but on the other

hand it sometimes happens that the dryer itself is at fault. Each variety of clay requires very different treatment in order to dry it safely and each treatment requires special dryer conditions.

In view of all these difficulties it is absurd for any one to advise another without some personal knowledge of the difficulty. In spite of this, however, it seems to us that "Missouri's" clay is one of those fine grained materials which has a weak structure and consequently it may break very easily under drying strains. Such clays when burned very hard are brittle, largely because of their uniformity and fineness of grain. They have no body, no skeleton structure; in fact, they are like a piece of brittle glass and any changes in temperature in the burning will cause them to break, and after they are burned they are likewise easily broken because of their brittleness.

If his clay does not contain an excess of sand it may be that the clay will stand more dead material and we would suggest the use of coarsely ground kiln clinkers which make an excellent binder. It seems to us that the weakness of his clay can be overcome by the addition of some sort of binding material, and crushed bats or crushed kiln clinkers are the best binders we know. The addition of coarse sand might accomplish something, but it is not as good a binder as the other materials mentioned.

We merely suggest this as a possible solution to his difficulty, and the expense of making a test along this line will be a small matter.

Ellis Lovejoy.

Wants Buff Colored Ware.

48, Ohio.—*What can we add to a red burning clay to make a buff or terra cotta color?*

We do not think it is practical to add anything to a red burning clay which will result in a buff or terra cotta color.

Lime will mantle the color of a red burning clay, when in sufficient quantity, and produce a buff color, but it is not a pleasing buff, and the trouble in burning a limey clay is so great that clayworkers compelled to use such naturally limey clays would give a very handsome sum to get rid of the lime.

You are not very far from the fields of buff burning clay in eastern Ohio, and if there is a good market for buff clay you could afford to buy and ship such clays.

Some of the buff mixed with your red burning clay will produce a terra cotta color and you can get any color from red to buff by different mixtures of the two clays.

Big Tile Crack Lengthwise.

46, Utah.—*"I made some 4, 5 and 6-inch drain tile to try my clay. The 4 and 5-inch tile are good and there is not much lost by cracking, but about one-third of the 6-inch tile cracked lengthwise. I burned them in an upright kiln and "stuffed" the 6-inch with 4-inch. I want to know why the 6-inch tile cracked, while the others did not. Would the "stuffing" make any difference? I was just as careful in making and drying one as the other, and all were made on the same pattern of die."*

Stuffing tile makes a decided difference. A number of manufacturers of drain tile have learned that they can burn their tile with very little loss when it is set single, but

when they attempt to "stuff" the smaller tile in the larger the loss in the larger tile becomes excessive.

This is not true of all clays, but it is true of some, and to this may be due the trouble your correspondent is having.

The trouble may also be due to the die. It is remarkable how sensitive some clays are to the slightest differences in manufacture. The dies may be the same character, and yet the tile of one size may crack and another not. Manufacturers of fire-proofing who have tender clays are fully aware of troubles which arise from very slight changes in the character of the clay or in the die.

The straight line crack in drain tile is primarily due to the bridge in the die which cuts the column into two streams and these two streams do not knit firmly together again. Now suppose we have a tender clay, in a small tile, greater pressure is required to force the clay through the die and this greater pressure may be sufficient to bond together the two streams flowing into the die so they will withstand the drying and burning strains. A larger tile may be weak because of the lighter pressure.

The smaller the die the more heat there is generated in forcing the clay through it. A small die will get hotter than a large one. This heat will raise the temperature of the water in the clay, and this effect alone may suffice to bond the smaller sizes while the larger sizes are just weak enough to crack under the drying strains.

We do not know what the cause of the trouble in the Utah plant may be, and merely mention the above facts to show how very slight differences may be the cause of the trouble.

We have known instances where simply turning a perfectly symmetrical die upside down overcame cracking.

We would suggest that your Utah correspondent first try burning without "stuffing" and if this does not overcome the trouble then he should investigate the die conditions.

Wants a Small Continuous Kiln.

50, Illinois—The owner of a small country brickyard, one mile from a railroad, making brick, drain tile, and some roofing tile would like to know how small a continuous kiln can be built successfully.

There is a new kiln just placed on the market, which is being advertised extensively which is said to meet with the requirements of plants of small capacity, inasmuch as it can be built very cheaply for a capacity as low as 15,000 brick per day or its equivalent in drain tile or other products. One kiln of this type which we have seen and which has been in successful operation for more than a year, has a capacity of 600,000 brick per month and cost less than \$3,000 to construct.

YELLOW PATCHES ON STONEWARE.

Defect in Glazed Ware Caused by Neglect at Critical Point in Burning.

Yellow patches on stoneware are produced when the ware is heated in too oxidizing a flame previous to the application of the salt, that is before the glazing, says a writer in the "British Clay work." He says: "The cause is in the fires burning too low admitting too much air, followed by a rapid salting before the ware has been 'reduced' again. Naturally, it only occurs as a defect in grey stoneware which is salt-glazed. The remedy consists in not allowing the fire to burn too low just before adding the salt.

"The defect is sometimes attributed," he says, "to insufficient heating whereby the ware is imperfectly vitrified, but the insufficient vitrification is only a coincidence. The goods most liable to the defect are those nearest to leaks and openings in the kiln, and as these are the coolest portions of the kiln the ware placed near them is naturally underfired. Nevertheless, the

yellow patches are not caused by the underfiring, but by the air gaining access to the goods. The same defect is observable in drainpipes made of red-burning clay when these are salt glazed, as well as in ordinary salt-glazed drainpipes."

QUESTION BOX.

If Any of Our Readers Can Answer these Inquiries We Will be Pleased.

Indiana.—I would like some information as to the proper proportions between kiln area and the area of the stack. You have had several articles bearing on the subject, but no one seems to give the proportions.

Michigan.—I equipped my plant for the manufacture of silo block, but my kiln is too open to "salt glaze" satisfactorily. My clay burns both white and red. If hard burned, but not glazed, would they be suitable for making silo block? They last indefinitely, underground, but I thought they might peel or scale from contact with the ensilage. Can you tell me?

Moscow, Russia.—Can you tell me if there is any firm making presses for pressing turf in the same manner as dry press brick are made? The question is an important one here where turf is much used for fuel. (We presume he has reference to the making of briquettes). We would also like to get the names of parties making high temperature resisting brick for furnaces, stoves, etc. We want only the highest grade. We are also interested in carborundum, and would like the names of parties producing same. We have in mind a project for using large quantities of it, in this country.

PRIZE OFFER FOR BEST SUGGESTIONS

Beginning with the Feb. 1 issue of "Brick and Clay Record," three special prizes will be offered each issue for the best suggestions in the operating end of a clay plant.

FIRST PRIZE—For the best suggestion received each issue a prize of \$2 will be given.

SECOND PRIZE—For the next best suggestion received each issue a prize of \$1 will be given.

THIRD PRIZE—For the next best suggestion received each issue a prize of \$1 will be given.

There are no restrictions placed on the length of the articles, but it is suggested that not more than 200 words be written and that brevity will play almost as important a part in determining the merits of a suggestion, all other points being equal, as the suggestion itself.

Write on ONE side of the paper only and sign your name and address legibly.

Address:

PRIZE EDITOR,
Brick and Clay Record,
445 Plymouth Court, Chicago, Ill.



MILLIONS WASTED ON POOR ROADS.

Chicago Tribune Comments on Extravagance of Present Road-Building Methods.

"Twenty-two millions of dollars have been wasted on Illinois roads in the last fourteen years."

This is the statement made by Representative Tice of the ways and means committee of the Association of Commerce. It was enough to make that body of business men sit up. It is enough to make every intelligent man and woman in the country sit up—sit up and act.

"Yet this statement is not half the story," says the Chicago Tribune, in an editorial which was in part as follows: "The waste of twenty-two millions of dollars—more than a million and a half a year—is bad enough. But added to

Township and county management and amateur road-making should be superseded by scientific roadmaking by the state."

Continual comments of the above type may finally result in opening the eyes of the people to the fact that only by the use of brick for pavements can this woful waste of money be avoided.

ROAD STATISTICIAN APPOINTED.

Secretary Pennybacker, of the American Highway Association, the Appointee.

The Joint Congressional Committee on Federal Aid in the Construction of Post Roads has selected J. E. Pennybacker, Secretary of the American Highway Association, for the



Exhibit of the National Paving Brick Manufacturers' Assn. at American Road Builders' Congress at Cincinnati, Dec. 3 to 6—Several Familiar Figures May be Noted in the Rear of the Booth.

that must be the loss to the farmers in unnecessary cost of hauling produce to market or the nearest shipping point. And to that there must be added the inestimable loss to the hundreds of thousands of Illinoisans who use the roads for pleasure.

"Illinois has as bad a system of road-making as any in the country and its roads are among the worst among well settled states. Isn't it time to establish a modern system which shall stop the heavy waste of money and effort and at the same time give us main thoroughfares throughout the state which shall be a credit to Illinois and a perpetual profit and pleasure to its people?"

"The next legislature should not fail to consider and act upon this subject. The Illinois Highway Improvement association already has an excellent program outlined.

position of Statistician to the Committee, Mr. Pennybacker retaining his status with the association. Hon. Jonathan Bourne, Jr., chairman of the committee, has inaugurated an exhaustive study of the road systems of foreign governments and of the various states, in which he is displaying the same indefatigable energy and comprehensiveness of method which marked his conduct of the parcel post project. The selection of Mr. Pennybacker as statistician is in great measure due to his work as editor of the Official Good Roads Year Book of the United States, a monumental work of reference on every phase of the road subject, the first edition of which was published by the American Highway Association in 1912. Its attitude on the question of federal aid was enunciated in the following resolution adopted at its last annual meeting at Atlantic City:

"This association looks with favor upon the investigation by the present joint committee of Congress toward giving Federal Aid in the construction, reconstruction and maintenance of highways in the United States and pledges itself to co-operate with and assist that committee in every way possible toward an early decision and the preparation of and presentation to Congress of an appropriate bill looking toward the immediate or ultimate granting of Federal Aid for highways for vehicle travel."

PAVING NEWS.

Late figures given out by the Local Board of Improvements, Chicago, Ill., show that there are at present 201 miles of brick paved streets in Chicago; 585 miles of asphalt; 583 of macadam; 301 of cedar block, 201 of granite; 27 of creosote block; 7 of slag; 5 of concrete and 3 miles of various other types of pavements.

A two weeks' lecture course on road construction and maintenance is to be given at the Ohio State University between February 24 and March 8. The course will consist of 35 or 40 lectures in connection with laboratory demonstrations and inspection trips.

Nearly thirteen miles of new paving were laid in Seattle, Wash., during 1912. This brings the total street paving within that city's limits to about 180 miles, in addition to 138.99 miles of planked streets and 608.75 miles of graded streets. During the year 46.18 miles of streets have been improved, including nearly three miles of brick paving.

More than thirty miles of sewer pipe were laid in Seattle, Wash., during the eleven months of the present year, making a total of 397.02 miles in service, with a considerable portion of the north trunk system and various lateral drains incompleted.

In New York state there are many brick roads which did not cost over \$4,000 to \$5,000 a mile.

Bergen county, N. J., has voted \$70,000 for the construction of one mile of roadway.

The Foster Paving Block Co., of Bradford, Pa., has taken over the Melvin & Peterson brick plant of that city. They have installed additional machinery for the manufacture of paving blocks and have built another kiln. This firm is very busy and has plenty of orders on hand.

At the annual meeting of the stockholders of the Saginaw Paving Brick Co., Saginaw, Mich., the following officers were elected:

President and general manager, John H. Qualmann, vice president, Rudolph Otto and secretary-treasurer, James H. Sleeth.

Reports were given showing the excellent condition of the concern and stating that business has been and is good, while the prospects are also very bright. During the past year the production totaled six million brick and orders are now on hand for about one-half million bricks. The company is still manufacturing brick and will continue operations for a week or two if the weather permits, when it will close down for repairs. It is expected to reopen in the spring on April 1.

At the annual meeting of the Purington Paving Brick Company, held Jan. 21, at the company's office in East Galesburg, Ill., the following directors were elected: D. V. Purington, F. G. Matteson, George C. Prussing, C. D. B. Howell, W. E. Phillips, P. T. Walsh, W. G. D. Orr. The officers chosen were: Chairman of the board of directors, D. V. Purington; president, F. G. Matteson; vice presidents, George C. Prussing and C. D. B. Howell; secretary, W. H. Terwilliger, and general manager, W. G. D. Orr.

The report of business done by the company for the

past year was satisfactory to the board. In denial of the reports which have been circulated by certain of those who left the employ of the company at the time of the recent strike, the secretary announced that the Purington company has not missed paying its customary quarterly dividend to stockholders since the strike occurred at its plant.

4,000 tons of slag paving block from Middlesboro, England, were shipped to Washington, D. C. This material, with several previous cargos of the same kind, will be used in the paving of the street railway tracks in various parts of that city.

Street improvements costing about \$110,000 were put in at Elizabeth, N. J., this year. This breaks all records for street paving work in that city. The city purchased a brick testing machine, and the engineer states that it has already saved the city more than its original cost, about \$475.00. Formerly brick were sent to Newark for examination at a cost of \$12.00 to which was added the carting cost of \$3.00. At present, the only expense in testing the brick is the cost of the electric power and the time of the men operating the machine, which is estimated at about \$3.00 per test.

Grand Rapids, Mich., is proud of its miles of splendid brick pavement, not only on its business streets but on residence streets, in the factory districts and around railway freight depots. Grand Rapids proved the merits of properly constructed brick pavement many years ago and has adopted as its motto, "Grand Rapids knows how."

Allegan, Mich., has been paving its business streets this season and now boasts of over one mile of brick paving, which is quite a good record for a town of 4,000 inhabitants.

According to a report submitted by Chief Connell of the Bureau of Highways, Philadelphia, Pa., the total miles of paved city streets in that city is 1,205.76. Of this paving, 193.07 miles are of vitrified brick. Existing contracts show 24 brick contracts amounting to \$90,199 out of a total amounting to \$2,449,328, of which asphalt gets \$1,208,368, which shows that the asphalt interests are by no means asleep.

Paving Brick Stolen.

Contractors engaged in paving Trenton, N. J., streets have frequently been annoyed by the theft of brick and blocks used by them in their work. A sub-contractor was laying a gutter on Union street, using in the work a high grade of vitrified brick, made only in Akron, O., and costing the contractor in lots of 50,000 the sum of four cents each.

When the brick were shipped there were enough to complete the job, but when the work was nearing an end it was seen that more than 1,000 brick were missing. Inquiry failed to locate the whereabouts of the material and a search ended with the same result. To have another lot of 1,000 shipped from Akron represented considerable expense, but it looked to be the only solution until last Wednesday, when Inspector Carty made a discovery. He found a pavement nearly laid with the same style of brick.

The brick were hurriedly counted and found to total exactly one thousand. Carty then notified Contractor Ginder, who detailed a gang of men to the scene with picks and shovels and every brick was removed and returned to the city job, whereupon the gutter was completed. Just when the brick were stolen or when they were laid in the pavement is a mystery. The foremen on the job were certain that the work was not done in daylight.



SAND VALUES FOR SAND-LIME BRICK.

German Expert Explains Why Proportion of Silica is Unimportant Factor.

In the opinion of Herr Olschewsky, the value of sand for lime-sand brick is not so much due to the percentage of silica present as to the form of this constituent and to the manner of its distribution. In "The Ziegel, Kalksandstein und Moertelindustrie," he says: "The ideal sand is one in which every grain can be covered with lime, and in which the whole of the lime comes into direct contact with silica.

"This does not necessarily mean that the sand is by any means pure, so long as the impurities are inside the grains, and do comprise complete grains themselves. Thus it is possible to use a sand composed of an entirely non-silicious material provided the grains are covered with a film of silica. Such a sand would be low in silica, and yet would give excellent results. The proportion of silica in a sand does not, therefore, necessarily indicate its value for making lime sand brick.

In some sands, the impurities are in the form of extremely minute grains which are arranged in the voids or spaces between the larger grains, and so long as the latter are properly coated with lime, the effect of the smallest grains (of impurities) may frequently be neglected.

"Tests of several sands with a low percentage of silica shows that brick of more than normal strength may be readily obtained with them. From this fact, Olschewsky argues that there are numerous sands which have hitherto been regarded as useless simply because they have a low silica content, whereas, in reality, the proportion of total silica is an unimportant factor in valuing a sand for the purpose of making sand-lime brick."

NEWS OF SAND-LIME PLANTS.

About 100 members of the San Francisco Architectural Club chartered a steamer recently, and took a trip up the river to the sand-lime brick plant of the Golden Gate Brick Co. at Antioch, Cal. The party were royally entertained, C. E. Pratt, manager of the company, acting as host at a bull's head dinner.

The Canada Brick Co. of Montreal is equipping its plant throughout for the making of high grade sand-lime brick, it having recently placed an order with the American Clay Machinery Co. for a 16-mold rotary sand-lime brick press. R. Brutinel is director of the company and he expects to make his plant one of the best in Canada.

The plant at Fort Jefferson, L. I., of the Dyett Sand-Lime Brick Co. of New York City, has had a busy season, it having found a ready market for its entire output of sand-lime brick.

The new plant of the Colton Sand-Lime Brick Co. at Orange, Cal., which was placed in operation some time ago, is said to be well equipped and well located for securing material and shipping the product.

The sand-lime brick factory which is being erected at Prince Albert, Can., at a cost of \$55,000, will soon be completed and in working order.

Work is being crowded for the completion of the sand lime brick plant being constructed at Pengilly, a station near Calumet, Minn., in Itasca county. A 300-h. p. boiler has been installed and a triple-expansion engine is in. Two hardening cylinders, 80 ft. long, each, are to be installed at once. Other machinery is ordered and en route. The plant has shipping facilities over the Mesaba and the Great Northern. It is expected that there will be a large demand for the product through Northern Minnesota and it is planned to run the plant continuously throughout the year.

NEWS OF AMERICAN SEWER PIPE CO.'S ACTIVITIES

There isn't any excuse for an able-bodied man remaining idle in East Liverpool, Ohio, these days, for, according to Mason Chilcote, assistant superintendent of the American Sewer Pipe Works, the factory, for several weeks, had been quite handicapped by lack of labor. Any reliable man that wants good, steady work can secure it by making application at the company's East End office. The scarcity of labor has necessitated the pipe works running seven days a week in order to make up the output required by the heavy orders.

After an idleness of over two years, the Lisbon, O., plant of the American Sewer Pipe Co., is to be placed in immediate operation. The property has been placed under the management of J. I. Crawford, and it is believed that the first pipe will be made February 1, and that employment will be given to nearly 100 men, providing that many can be procured.

At the Pittsburgh offices of the American Sewer Pipe

Co., in Akron, O., it is reported that the company will hereafter manufacture its line of interlocking sewer block at its Brazil, Ind., plant. With this end in view the Brazil plant is having its capacity increased and machinery added for producing the block in large quantities.

The American Sewer Pipe Co. is the largest manufacturer of sewer pipe in the world and while it has many plants in many states it is said its best sewer pipe are not made in the East, as the clay in the West seems to work up better for this purpose. With improved machinery and methods of handling sewer pipe, the output has been gradually increased and the cost decreased. Sixteen years ago, 160 pieces were considered a good day's work, but to-day that many are easily made in an hour. Electricity enters largely into the processes of manufacturing the American sewer pipe. The clay is mined and mixed by electric light and in various parts of the work electricity does its part in lightening the labor.

A REMARKABLE BELT RECORD.

Belt in Use More Than Twenty-Seven Years Needed Only Slight Repairs.

Only those who have been through a brick plant and realized the immense amount of grit that is constantly flying about and finding its way into the various parts of equipment can appreciate the significance of a letter just received by the Gandy Belting Company from the Bessemer Fire Brick Co. of Birmingham, Ala.

The main drive belt at this plant is an 8-ply 26-inch Gandy, and has been in operation for over 27 years, during which time the plant has not been shut down except for repairs to the machinery.

In the early part of this month the driving belt pulled out at the old lace holes, where they formerly used leather lacings and later changed to belt hooks. This is the first time the belt has given the least trouble in the manufacture of over 140,000,000 fire brick that have been turned out during its period of service. The owners are simply splicing on a new piece of belt to repair the damage, and the belt has continued in service and, from its appearance, it will be giving service for a long time yet.

While this seems a remarkable record, the Gandy Company tell us that it is by no means an isolated case, as their records show many such instances. They are making a specialty of belts for this class of work, and in fact for all conditions where the belt is subjected to particularly hard usage, and where leather or rubber does not give perfect satisfaction the Gandy has been found to give excellent service.

A Righteous Complaint.

The following letter is from the Frink Pyrometer Co., and as the concern has a righteous complaint to make, we give it space. The letter speaks for itself.

"We wish to correct a faulty impression that we cannot but feel was conveyed by an article in your issue of January 1st. The article is entitled, 'Hollow Tile Men Up in Arms,' by John Grayar, and the part to which we especially refer is the tabulation of temperatures of the test made of this hollow tile. In this tabulation it indicates that the pyrometer used in making the test went out of order at a temperature of 1760 F., and further along in the article notes that Mr. F. J. Frink of the Frink Pyrometer Co., took the pyrometer readings with a thermo-electric pyrometer. Now, our Mr. F. J. Frink informs us that the thermo-electric element used in this test was of a length sufficient to reach to the center of the testing enclosure, and in the course of the test, the ware toppled over, breaking the element flush off, thus severing the metallic connection with the indicating instrument.

"You can readily see that the bare tabulation published in your columns naturally gives us a black eye, and we hope you will take the earliest possible opportunity of giving your readers the facts in the case."

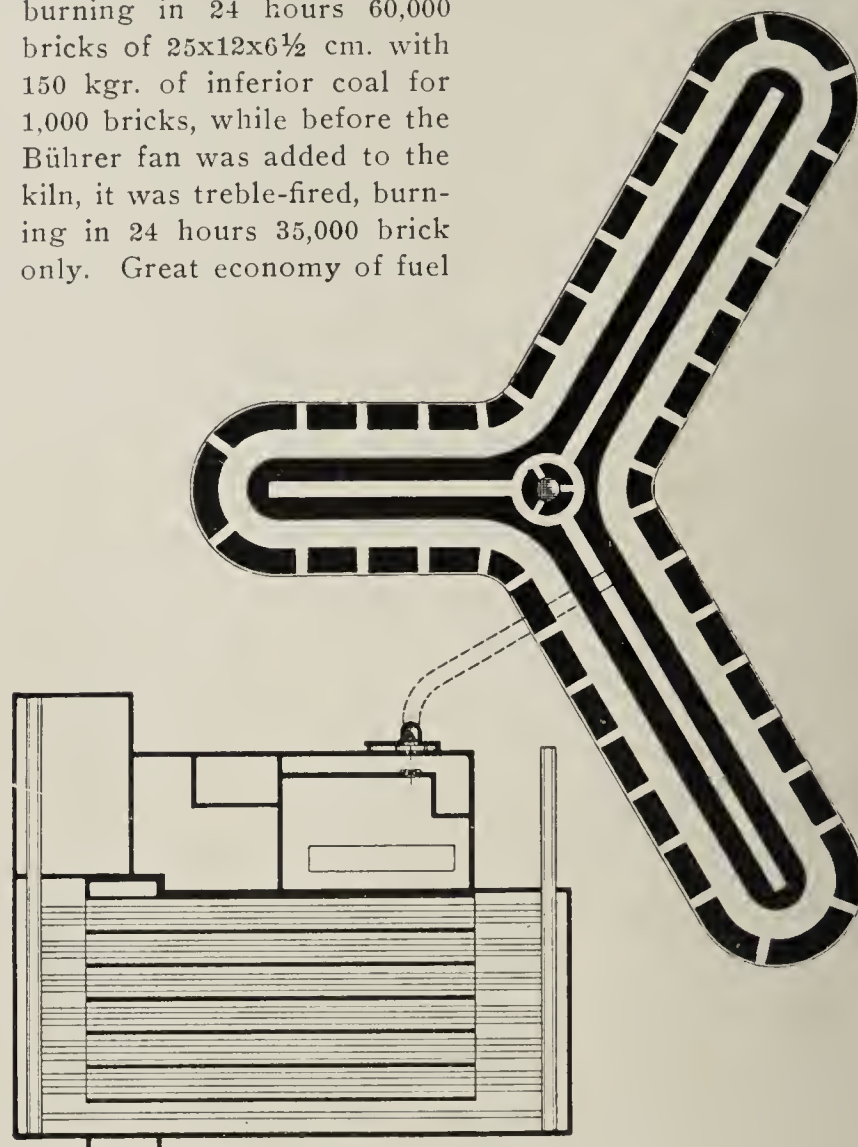
Canada's Clay Industry Shows Increase.

In view of the recent developments in every line of industry in our neighboring country, Canada, it is interesting to note that the output of clay products in Canada in 1911 was valued at \$8,359,933, against \$7,629,956 in 1910, an increase of \$729,977. In 1910 419 active firms reported, against 438 in 1911, the number of employes averaged 9,131 in 1911 and 8,656 in 1910, while the wages paid were \$3,524,058 in 1911, as against \$3,308,609 in 1910. Of the total value of production in 1911 building and paving brick, including fireproofing, contributed \$6,915,792, or nearly 84 per cent.

BUHRER FAN SAVES FUEL.

Addition of Bühler Fan to Kiln Results in Saving of Fuel and Time.

The accompanying drawing shows the three-cornered continuous kiln of Mr. J. Whalen at Cologne, Germany, which, after a Bühler fan was added was double-fired, burning in 24 hours 60,000 bricks of 25x12x6½ cm. with 150 kgr. of inferior coal for 1,000 bricks, while before the Bühler fan was added to the kiln, it was treble-fired, burning in 24 hours 35,000 brick only. Great economy of fuel



Cross Section of a Three-Cornered Kiln to Which a Bühler Fan Was Added.

was effected by using the waste heat of the kiln and the smoke gases of the boiler for drying.

When working with chimney draft it was necessary to do extra firing, using a great quantity of coal, but by the use of the Bühler fan, the waste heat of the kiln and the smoke gases of the boiler are forced to the dryer. The fire gallery of this three-shanked kiln is about 238 meters long, 2.80 meters wide and 2.50 meters high, and the huge chimney is closed by a throttle valve.

Appoints Canadian Representative.

The American Clay Machinery Co., Bucyrus, O., appreciating the rapidly growing market for clay-working machinery in Canada, has appointed William H. Merkel as their permanent representative in Canada. Mr. Merkel makes the King Edward Hotel, Toronto, his headquarters, and is at the disposal of any Canadian clay-worker wanting information regarding machinery, clay testing or other clay engineering information.

A school for women to learn the trades of plumbing, carpentry or bricklaying has been opened in New York City under the auspices of the Master Builders' Association. This move was prompted by over sixty communications during last year from women who desired to enter one of the trades named. It may be that this move will solve the problem of securing sufficient bricklayers to carry on brick building successfully at moderate cost.

AERIAL TRAMWAY ECONOMICAL

Kentucky Brick Plant Uses Bucket Type to Convey Material from the Pit to the Machine

When the Winchester Granite Brick Co., of Winchester, Ky., was planning its plant, which is located at Dudley, Ky., the question of the most economical means of conveying the sand from the bank to the brick machine was investigated thoroughly, and after due consideration, a Broderick & Bascom aerial tramway was installed and since the plant was established in 1904 this conveying method has been in use and its work has been eminently satisfactory.

As shown in the illustration, this is the two-bucket system, consisting of two buckets or carriers operating back

and forth upon parallel stationary track cables. The buckets are so located that when one is at the loading station at one end of the line, the second bucket is at the discharge station at the opposite end. The tramway is 1,400 feet in length, with a capacity of about twenty tons per hour.

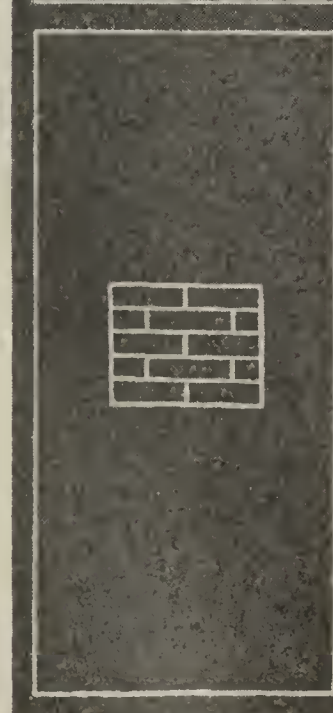
Mr. Allan, the manager of the company, states that this tramway, which is still running, has recently handled as high as twenty-three to twenty-four tons per hour.

The business of the firm increased to such an extent that this year another Broderick & Bascom Two-Bucket Aerial Tramway, 500 feet in length, with a capacity of thirty-five tons per hour, was added to the equipment. This latter tramway is equipped with buckets, holding fifteen cubic feet of material each.

At the tramway loading station, wheeled scrapers are used for bringing the sand to the loading bin, from which the tramway buckets are filled. One attendant is all that is required to operate the entire line. This man is located at the loading station, and controls the brake and loading chute levers.

At the discharge station, the buckets are tipped automatically and material dumped into a bin, no attendants whatever being necessary at that point, at this plant.

Both the old and the new tramway operate by gravity, no power being required, as the fall between loading and discharge stations is sufficient to enable the loaded bucket going down on one side to pull the empty bucket up on the opposite side.



The Views Above Show the Broderick & Bascom Aerial Tramway in Use at Plant of the Winchester Granite Brick Co., at Dudley, Ky. Above Is the Loading Station of the New Tramway, Below Discharge Stations of Old and New Tramways.



Conditions from the Atlantic to the Pacific as Reported by Our Expert Observers— Market Fluctuations and Industrial Prospects

NEW PLANTS AND ADDITIONS.

C. E. Mecusker of Sedalia, Mo., and C. S. Bahney, formerly of Carthage, Mo., now living at Fort Scott, Kas., propose to establish a brick plant at Carthage, Mo., at an expenditure of \$35,000.

The Greene County Brick Co., at Jerseyville, Ill., has been incorporated with an authorized capital of \$30,000. The incorporators are: J. T. Hanley, W. A. Brown, S. E. Pierson.

The Bowers Pottery Co., has been incorporated with a capital stock of \$500,000. Although this company was organized by Wheeling, W. Va., men the plant will be located at Mannington, W. Va. Mr. Bowers will be the head of the new institution.

At a meeting of the Corsicana Brick Co., at Corsicana, Tex., a motion was passed, providing for the addition of improvements to the amount of \$8,000. The new officers elected are: J. A. Thompson, president; R. Mays, vice-president; Z. L. Pogue, secretary and treasurer.

The Interstate Clay Products Co., at Highland Park, N. J., has been incorporated with a capitalization of \$100,000, to deal in all kinds of clay products. The incorporators are: R. W. Lyle, New York City; W. J. Lyle Highland Park; and J. R. Littell, New York City.

The Hamblet Brick Co., at Portland, Me., has been incorporated with a capital of \$30,000. It will deal in brick and conduct a general construction business. The incorporators are: S. B. Densmore, president; G. C. Hamblet, clerk and treasurer. The directors are: S. B. Densmore, G. C. Hamblet, and Norman Singer all of Portland.

The Mason City Brick & Tile Co., Mason City, Iowa, has filed articles of incorporation for \$250,000. The incorporators are: F. E. Keeler, president; F. A. Stephenson, vice-president; B. C. Keeler, secretary and treasurer.

The Shepher Clay Products Co., of Sugar Creek, O., is said to be seeking a location in the South for an additional plant.

Chas. A. Smith of Pittsburgh, R. D. Duranter of McDonald, Pa., and C. E. Meyer of Ingram, Pa., have formed the Buffalo Creek Coal & Brick Co. with a capital of \$250,000. Offices in Pittsburgh.

The Pittsburgh offices of the Kittanning Brick Co., have been awarded the contract for the furnishing of the brick to be used in the construction of the new St. Nicholas Greek Catholic Church at Brownsville, Pa.

Walter Gray, J. F. Walton and R. P. Morrow, all of Pittsburgh, Pa., have formed the Templeton-Face Brick Co. to manufacture brick, tile, terra cotta and fireproofing.

The American Brick Co. was recently chartered at Wilmington, Del., with a capital stock of \$2,000,000 by Herbert E. Latter.

H. S. White of New Kensington, Pa., has purchased a tract of fire clay land at Tarentum, Pa., on which he will erect a modern plant.

L. V. Austin, Hattiesburg, Miss., is at the head of a syndicate which recently purchased clay deposits near Hattiesburg, where a modern brick plant will be installed.

The Modern Tile Co., Knoxville, Tenn., of which R. A. Mouron is manager is preparing plans for a modern clay plant to be erected on land which the company recently purchased.

R. M. Burt, Hastings, Fla., is contemplating the establishment of a brick plant in Florida.

D. G. Moomaw of Stone Creek, O., is looking for Southern clay lands on which to build a brick plant.

A charter has been granted to the Pennsylvania Impervious White Brick Co. of Wilmington, Del., capital \$350,000. It is the intent of the company to manufacture brick and tile.

The Pittsburgh Fire Brick Co. of Harrisburg, Pa., has just been granted a charter. Those interested are: J. E. Hunter, I. W. Brison and J. S. Skelly.

Hocker Bros., De Pere, Wis., are preparing to equip a plant for the manufacture of hollow building tile.

The Streetsville Brick Co., Limited, at Toronto, Can., has been incorporated with a capital of \$100,000. The provisional directors are: Edgar Vandewater, real estate agent; Frederick Longwell, manufacturer, and John Drummond, builder.

The Hansen Products Co., St. Louis, Mo., has been incorporated to manufacture brick and other building materials with a capital of \$50,000. The incorporators are: W. A. Dunham, Benjamin T. Durfee and H. Sears.

The Lynchburg Brick Co., at Lynchburg, Va., has been incorporated with a capital stock of \$60,000. The officers are: H. E. DeWitt, president; C. S. Hutter, vice-president; W. O. Taylor, secretary and treasurer.

The new owners of the Milldale Brick yards at Southington, Conn., plan to do business on a much larger scale in the future than has been done in the past.

The Logren Lumber Co., Portland, Oreg., is contemplating the establishment of a clay plant at Cherry Grove, Ore.

The Banner Clay Works, St. Louis, Mo., and Edwardsville, Ill., is planning improvements to its plant to increase its capacity.

Jno. A. Barbay, of Crescent, La., is planning to establish a brick plant at Port Arthur, Texas.

The Malakoff Pressed Brick Co., Malakoff, Tex., will enlarge its plant and make other improvements.

The Haeger Brick & Tile Co. is the new name of the D. H. Haeger Estate at Elgin, Ill. Its capital stock has been increased from \$250,000 to \$350,000.

A proposition for establishing a brick plant at Carthage, Mo., has been submitted to the Business Mens' League of that place.

The Kaul Clay Co. will double the capacity of its plant at Toronto, Ont. The cost of adding a four-story building together with improvements to the clay mines, which will be electrically operated, and to the coal mines, which will be equipped with electric haulage, will come close to \$50,000. The new additions will give employment to 100 more men, making a total of 250 workmen.

The Puryear Utility Co., at Puryear, Tenn., which recently purchased a plant from the Dixie Fire Brick Co., has been incorporated with a capital of \$50,000.

Wm. G. Condon, who was formerly sales manager of Fiske Co., Inc., New York City, has recently gone into business on his own account at 45 Milk Street, Boston Mass. He wishes to announce that he would be pleased to receive samples of face brick from parties desiring representation in New England.

Frank H. Huff, mining engineer, Meaford, Ont., P. O. Box 355, and W. E. Hunter, 105 MacDowell Ave., Meaford, are making plans to establish a clay plant.

NEWS OF THE CLAY WORLD.

R. E. Whitacre, president of the Whitacre Fireproofing Co., is on the grounds at the new plant at Chicago Heights,

Ill., and is pushing operation as fast as possible. It is expected that the company will put the plant's first product on the market within thirty days, although the buildings will not be completed by that time. The tall stack which has just been finished is constructed of special material prepared at the Ohio plant.

The Athens Brick Co., at Athens, Ohio, has been making a number of experiments in manufacturing paving blocks. Some combinations of materials have been tested and several kilns filled with the ware.

The Advance Terra Cotta Co., has changed the location of its main office from Clearing to Chicago Heights, Ill.

A portion of the bottom of the new concrete reservoir at Johnson City, Tenn., dropped out and two and a half million gallons of water were released. The break made a hole twenty feet square in the reservoir.

The Clay Products Co., at Grand Ledge, Mich., elected the following officers and directors for the ensuing year: E. A. Turnbull, president; Dr. W. E. Wilson, vice-president; F. A. Taber, secretary and treasurer; A. R. Gillies and Gerald McCoy. The past year has been a very successful one with this concern as it shipped over a thousand cars of clay products.

Joseph Mitchell of the McLaughlin Building Material Co., Chicago, will take a southern trip to Florida and the Bermudas. He will meet his family in Florida and from thence sail to the Bermudas and make a tour of the islands.

The officers for the coming year for the Atchison Paving Brick Co., Atchison, Kans., were elected by the stockholders. They are, W. T. Hudson, president; T. W. Wolters vice-president. The other officers will be elected at an adjourned meeting.

John A. Guiler of Connellsville, Pa., who owns 25 acres of clay near Suter, Pa., will go to Zanesville, Ohio, negotiate for the location of a pottery plant on his land.

The Burgess and Town council of the Borough of North Charleroi, Pa., held a meeting and decided upon brick as the material to be used in paving Fourth St., from Conrad Ave., to the public school.

The New Jersey Brick Co., has closed its plant at Mateawan, New Jersey, for about a month, to install new machinery.

The McLeod & Henry Fire Brick Co., at Troy, N. Y., recently entertained its traveling salesmen, by tendering them a supper at the Troy Club House.

At the annual meeting of the Washington Brick, Lime & Sewer Pipe Co., at Spokane, Wash., the following officers were elected: J. H. Spear, president; D. B. Frothingham, vice-president; A. L. Ruff, secretary and treasurer.

Herman Cordes of Indianapolis, Ind., who for thirty years has been a brick manufacturer died at his home in that city, after an illness of several years from cancer of the stomach. From 1863 until his retirement in 1893, Mr. Cordes was actively engaged in the clay industry.

The Board of Public Works at Los Angeles, Cal., at the suggestion of Building Superintendent Backus, recommended to the Council the passage of an ordinance requiring the mixing of concrete for re-enforced concrete building work, to be done under the supervision of a proper official of the city's building department. Backus suggested that the person testing cement be required to file an affidavit with the building department, or that the city's regular cement tester make the tests at the expense of the contractor.

F. G. Lucas has purchased the Castanea brick plant of the Castanea Brick & Tile Co., at Lock Haven, Pa.

The Bickford Fire Brick Co., of Curwensville, Pa., is adding additional equipment in order to meet the constantly increasing demand, and has increased its capital stock to one million dollars.

The stockholders of the American Brick & Tile Co., Mason City, Iowa, held its annual meeting and re-elected the following officers: A. H. Gale, president; C. L. Smith, manager; A. H. Martin, secretary; D. W. Vroom, treasurer. The report for the past showed that the company enjoyed a very prosperous year.

Edwin F. Knight, who for the past 6 years has been sales manager of the Bradford Pressed Brick Co., Bradford, Pa., has resigned his position with that concern, in order to accept the position as manager of the clay

products department of the Buffalo Builders Supply Co., at Buffalo, N. Y.

At a meeting of the stockholders of the Berlin Brick Co., at Purington, Conn., the following officers were elected: E. H. Hotchkiss, president; H. A. Pease, vice-president; H. J. Castle, treasurer; H. J. Wylie, secretary. The foregoing with W. A. Hotchkiss and E. H. Waterbury constitute the board of directors.

John Kahl of Madison, Neb., is looking for a location to establish a brick plant at Norfolk, Neb.

We are informed that the report to the effect that the Kelly Foundry & Machine Co., Goshen, Ind., had failed, was unfounded. The report probably arose from confusing the above company with the Kelly Foundry Co., Elkhart, Ind., which lately passed into the hands of a receiver.

The Chisholm, Boyd & White Co., Chicago, Ill., has shipped another press to the E. H. Crandell Pressed Brick & Sandstone Co. (formerly the Calgary Pressed Brick & Sandstone Co.) and this company is now operating two four-mold presses. This same company has also sold to the Saskatchewan Clay Products Co., Moose Jaw, Sask., which is now building a plant, a four-mold "Special" Boyd press and 9 ft. standard weight dry pan, with some additional machinery, which will be shipped early in March, this year.

The Kasten & Schmuke Press Brick Co., of Jackson, Mo., has installed a No. 98. Brewer machine, special feeder and pug mill.

The Ft. Wayne Tile Co., of Ft. Wayne, Ind., has recently installed a Brewer No. 88 machine and a spiral feeder and pug mill.

The C. W. Raymond Co. will have the same suite at the Congress Hotel during the Clay Show and Convention as last year, having reserved rooms B2 and B4.

The following machinery concerns had representatives at the annual convention of the Iowa Brick and Tile Association at Des Moines, Ia., Jan. 22-24: The Edgar Allen American Manganese Steel Co., The American Clay Machinery Co., Arbuckle Co., H. W. Brewer & Co., Chambers Bros. & Co., Eagle Iron Works, the J. D. Fate Co., Main Belting Co., Murray Iron Works, and C. J. Weston.

The Illinois Shale Tile Company, D. C. Haeger estate, has been reorganized under the corporate name of the Haeger Brick & Tile Company, with D. C. Haeger, president, and E. H. Haeger, secretary and treasurer. The company has plants at Dundee, Ill., Gilberts, Ill., and Coal City, Ill.

H. C. I. Sills, of Gunnison, Col., has leased his brick yard and equipment at Gunnison to the Endner Lumber Co. for five years on the royalty basis, which company will carry on the brick business.

Hocker Bros. of De Pere, Wis., are making preparations to manufacture hollow building tile at a plant near that place, which will be re-equipped for the purpose.

The Somers Brick Co., of Atlantic City, with plant at Northfield, N. J., after a very successful run of eight months, closed down January 4th. During this time from a hundred to a hundred and twenty-five men were employed, and the average make per day was 100,000.

This large capacity is the result of thousands of dollars being spent during the winter of 1911-12 for improvements, which included new brick making machines, a locomotive crane, engine and cars, several new kilns, increased dryer room, new boilers, tank and tower, coal trestles and numerous other extensive additions and alterations. The company has a large quantity of brick on hand to carry them over the winter, and reports orders coming in strong.

M. J. Bond, at one time connected with the Standard Clay Co., of Tacoma, but recently from Victoria, B. C., has taken the management of the Lake Union Brick Company, Seattle. The plant is to be opened under his direction in a short time.

J. L. Gilcrest has sold his share of stock in the Davis-Price Foundry & Machine Co., at New Cumberland, W. Va., to Robert M. Francy and Thomas Price, of Toronto, O. The company has been reorganized and R. M. Francy was elected president; Thomas Price, vice-president, and Thomas Shaw, secretary and treasurer. Fred Graham and Nathan Jacobs are also directors in the company. Mr. Gilcrest, who has been president and general manager of the company, will go on the road as salesman of a gen-

eral line of mill supplies. It is not known who will manage the plant under the new organization.

The Allis Brick Co., at Chicago, Ill., increased its number of directors from three to seven.

A. L. Delkin, of Seattle, Wash., has leased the fire brick plant at that place from Mrs. Ladd, of Atlanta, Ga. He will begin preparations to start operations at an early date.

KENTUCKY.

Louisville, Ky., Jan. 27.—Extremely inclement weather is doing its worst to put the clayworkers of Louisville and Kentucky down and out and is failing capitally in this intent. Notwithstanding the highly unfavorable weather conditions, the general aspect of the trade at present is infinitely better than it usually is at this time of the year.

Conditions affecting the building trades, while they have not been absolutely prohibitive, have been much affected by rain and very little new work has been commenced. Considering the fact that comparatively little important building has been commenced during the month, the fact of excellent demand existing among jobs of previous vintage was welcomed by the brick men, and deliveries have been handled in ship-shape fashion during the past few weeks, although the time for a cessation of actual producing operations was on.

Within another month the trade will be passing out of the grasp of an altogether too mild winter, and spring business will open right and left. There are many big jobs in view, several of them having been closed already by various brick companies. The building boom of the past two years is too decidedly pronounced in its present effect to be allowed to die away, and prosperity will undoubtedly be the portion of the clayworkers in the Bluegrass for months to come.

Within the past few weeks more than a dozen new stores have been erected along a single block of Louisville's budding retail business district, along Fourth avenue from Chestnut street to Broadway. Anywhere from 20,000 to 50,000 brick may be consumed in each "taxpayer," as the temporary improvements for business purposes are known, and the initial structure is almost invariably the fore-runner of another and larger one, designed to produce dividends permanently on the property.

A. Dumesnil, formerly president of the Hydraulic Brick Co., a veteran concern in the local trade which is contemplating liquidation, will leave shortly for an extended trip through the West, accompanied by his daughter.

Associated with A. J. Jungermann, newly-elected president of the Hydraulic Brick Co. of this city are Donald McDonald, Charles J. Doherty and Walter S. Adams, all well-known Louisville business men, with the aim of disposing of the two remaining yards of the company as soon as possible. Messrs. McDonald and Doherty, both of whom are extensively interested in the Louisville Heating Company and its subsidiary, the Kentucky Heating Company are prominent figures in the action which is under discussion whereby H. M. Byllesby & Company, leading Chicago public service capitalists, may absorb the Louisville and Kentucky companies along with their present holdings, the Louisville Gas and Louisville Lighting companies, thus gaining complete control of the public utilities in the Falls City. When this merger is effected by the Byllesbys, it is promised, 35-cent fuel gas, priced at approximately half its present rate in Louisville, will be brought to the city by pipe lines from the West Virginia fields of the Standard Oil Company, and the biggest industrial boom in the history of the Bluegrass metropolis is expected confidently as the result of cheap gas.

About 200,000 face and hard brick are being furnished by the East End yards to the Oertel Brewing Co. on Story avenue, and 100,000 hard brick to the new drug store and apartment building being erected by J. H. Wolf at Barret avenue and Kentucky street. Paris M. Crane, of the East End Brick Company, has reported ample inquiries ahead with his company.

The East End Brick Company, of Louisville, finds upon recapitulation that at present it is exactly one month

ahead of where it was at this time last year. This seemingly impossible gain is the result of the company's having recommenced brick manufacture for the spring of 1913 exactly thirty days earlier than usual. On January 21, after a shut-down of twenty days' duration, during which time the plant was completely overhauled and put into shape for the new season, operations were resumed at the machine.

With the first favorable opening in the weather, the Hillenbrand Brick Manufacturing Co., of Louisville, will install a considerable quantity of new machinery.

While current business is fully up to standard with the Hillenbrand Company, the future is expected to provide about 100 per cent more quality and quantity in trade than there is existing at present.

The rising waters of the Ohio river during the middle of January at Louisville crept to the cold gray shale banks owned by the Louisville Brick Company in the West End, ascending inch by inch until, with a rush, the yellow torrent poured over into the company's clay-pit and in a few hours the raw material supplies of the yard, save for a quantity of shale stored in a capacious shed specially designed for this purpose, were completely inundated. The flood did absolutely no damage, as shale is largely impervious to and certainly unharmed by water, so that Joseph Nevin, president of the company, is confident of being able to resume digging at the pits within a few weeks, now that the high water has commenced to subside rapidly. The machine will be started in operation once more on March 1, and until that date, the company has reported, its stock on hand as sold ahead.

A big contract for supplying about 250,000 hard brick to the Selden-Breck Construction Co., of Louisville, for the new 15-story Starks building at Fourth avenue and Walnut street, has been closed by the Louisville Brick Co. The contract is but one of several large ones which President Joseph Nevin, of the Louisville Brick Co., confidently expects to close before the new year gets much older.

With about 200,000 hard brick going to a down-town sky-scraper and something over 50,000 face booked for an East End apartment house, the Southern Brick & Tile Co. feels that it has no cause to worry about mid-winter business. The company is furnishing all hard brick used by the H. H. Snyder Co. in erecting the handsome new 11-story home office building of the Great Southern Fire Insurance Company at Fifth avenue and Walnut street, and is delivering 50,000 high-grade face to the new pharmacy and apartment house being erected by T. H. Wolf at Barret avenue and Kentucky street. The Southern yard, possessing private switching facilities with the Kentucky & Indiana Terminal Railroad Company and thence to any railway entering Louisville, recently had its switch enlarged to accommodate ten cars.

T. Bishop, president of the Southern Brick & Tile Co. recently returned from a short trip to Chapeze, Bullitt county, Ky., where he closed a number of fine contracts for tile and tile-setting. This branch of the company's business is in exceptionally fine shape at present, a great deal of drainage improvement being in the hands of Kentucky farmers.

Involving a consideration of about \$60,000, the Leaf River Gravel Company, of Hattiesburg, Miss., recently disposed of its clay deposits near Hattiesburg to L. V. Austin, the head of a syndicate of well-known Mississippi business men. The new owners of the property will equip and operate a thoroughly modern brick plant upon the shale beds, developing considerable capacity as soon as the work of installing equipment has been completed.

Amended articles of incorporation have been filed by the Hill & Smith Brick Co., of Paducah, Ky., authorizing a change of name to the Hill & Cranes Brick Co.

Announcement of the recent marriage of William Nevin, son of Joseph Nevin, president of the Louisville Brick Company, of Louisville, and Miss Hallie E. Weaver, a niece of former Mayor Charles P. Weaver, was recently made. Mr. Nevin and Miss Weaver were married April 5, 1912, in Jeffersonville, Ind. The announcement was a complete and happy surprise to their friends.

J. B. Prullage, a well-known brick manufacturer of Vincennes, Ind., has filed a voluntary petition in Bankruptcy in the Federal Court at Evansville, the statement of his assets and liabilities placing the former at \$8,000 while the latter aggregate \$15,000.

The Modern Tile Company, of Knoxville, Tenn., recently incorporated in that state to engage in the development of extensive clay deposits near Knoxville which it controls, has purchased two acres of land which will be a site for its plant. R. A. Mouron, manager of the company, is preparing plans for the factory, which is to be of considerable capacity and thoroughly modern in every particular.

The Pinson Pottery Company, of Pinson, Tenn., has sold its property in that city to F. E. Robbins, of Jackson, Miss., for a consideration of approximately \$5,000. Mr. Robbins acquired about 60,000 gallons of stoneware as well as extensive clay banks in the trade and will proceed with the manufacture of Pinson pottery along broader lines.

A brick plant in the extreme Southland is to be established in the near future by R. M. Burt, of Hastings, Fla., who is contemplating entering into the trade of the peninsula.

As soon as D. G. Moomaw, of Stone Creek, O., finds it possible to locate Southern clay lands satisfactory for his purposes, he will proceed with the establishment of a well-equipped plant to manufacture bricks and blocks, he has announced.

NEW YORK.

New York, Jan. 25.—The East has already exceeded its appropriation of last year in its contributions to the big Clay Show for 1913. More than a thousand dollars has been contributed to defray the cost of a joint exhibit to represent eastern clay interests. Approximately \$500 was subscribed by some of the Hudson river brick manufacturers at the annual meeting of the Greater New York Brick Co. this week; \$300 has been subscribed by the New England brick producers, and promises are in hand which will bring the total well above the thousand dollar mark.

All of which goes to show that the interest in the big project is greater hereabouts than it was last year. An aggressive campaign is being made among the pottery interests in the hope that some of the gallery space can be used for a portrayal of that branch of the clay industry, and an effort is being made to interest some of the kaolin factors where they affect the paper industry.

All the officers of the Greater New York Brick Co. were re-elected at the meeting held at the company's offices, 103 Park avenue, on the 21st. They are: President, John B. Rose; vice-president, A. E. Aldrich; treasurer, Robert Main, and secretary, Frank DeNoyelles. These directors were elected: Everett Fowler, Frank DeNoyelles, John Peck, Lucien H. Washburn, Denton Fowler, Jr., John F. Shankey, George S. Allison, Clarence L. Bleakey, Edwin Brockway, A. E. Aldrich, William Malley, W. A. Nicholson, John B. Rose, Henry J. Jova, M. M. Hayden, David Terry, H. R. Brigham, I. J. Rose, George Hutton, Alva S. Staples, Hiram Merritt, John E. Lynch, W. N. Carey, C. F. Sudderley, W. W. Rider, Percival Goldin, Robert Main, George W. Washburn and Fred B. Luther. In this list the name of I. J. Rose appears for the first time. He succeeds his father, the late Alonzo Rose.

The executive committee consists of John B. Rose, Henry J. Jova, Robert Main, George W. Washburn, Edwin Brockway, who succeeds Alonzo Rose, deceased, H. R. Brigham, A. E. Aldrich, C. F. Sudderley, Lucien H. Washburn, Everett Fowler, John E. Lynch and Frank DeNoyelles.

Most of the meeting was taken up with election business and in the absence of President Rose, who is in Panama, Vice-President Aldrich presided. An address, prepared by President Rose, was read, in which a review of the brick season just closed was made, and upon being compared with reports of former year's business, it was the sense of the meeting that material progress had been made in the new system of selling common brick in this market and that the future boded well for all concerned. This conspicuous statement was made in the address: that on January 1st there were 304,000,000 brick in shed up the river, whereas there were only 219,000,000 in shed reserve at this season a year ago. It was also stated that the kiln outputs up the river had been seriously curtailed during the last season because of scarcity of labor and other causes.

New Angle to Brick Situation.

A new angle has developed in the eastern brick situation, revealing an alleged attempt to manipulate brick consumption in this market. The matter has been placed in the hands of the district attorney for investigation and indictments have already been found against seven members of the Mason Builders' Association and the Brick Layers' Union. The district attorney is investigating an alleged conspiracy among some of the members of these organizations to restrict trade. Two of the seven men named in indictments filed in the Criminal branch of the Supreme Court are under arrest, charged with extortion and preventing Edward O'Connor, an independent contractor, from following his calling of mason and brick builder. The men already in custody are Charles H. Bohland and Frank Lahey, both of this city.

The testimony upon which the indictments were based, according to information given out at the office of District Attorney Whitman, was to the effect that O'Connor has a contract with the B. & S. Realty Co. to do brick work amounting to \$75,000 on apartment houses at Washington avenue and 174th street. His workmen were members of the brick layers' union. O'Connor is an independent contractor; that is, he does not belong to the Mason Builders' Association.

According to the contractor, he was waited upon by a business agent of the brick layers' union, who threatened that unless he joined the mason builders' association a strike would be called on his work. There was a time limit in his contract, but O'Connor says he paid no attention to the demand. At the same time, according to his story, some one waited on those who were furnishing O'Connor's supplies and told them that trouble was in store for them if they continued to supply him. O'Connor says that a strike was called and that he was unable to continue work under his contract.

The contractor and his lawyer called upon Mr. Whitman and the district attorney laid the facts before the Extraordinary Grand Jury, which immediately filed indictments.

The significance of this incident in the eastern brick market is two-fold: First, it shows the stress, perhaps better than any other way, under which the eastern brick market is laboring. In the second case, it opens up an investigation here that may result in a further change in certain features of the selling business.

Navigation Records Smashed.

All records in Hudson river and Raritan river navigation have been smashed by the unusually open winter we have been having here. On January 19, 1810, boats plying between New York city and Albany stopped running. That was the latest period known for open river navigation in winter. At the present time barges freely pass from this city to all Hudson river brick points and the prospects are that navigation will remain open for at least two weeks, if not longer, as the river is flooded as a result of heavy inland rains, and it will take almost a week of zero weather to close the stream to boats.

In one way the shortage of steel in this market is having a good effect upon the brickmaker's supplies. If this delay in building construction were not existent, the available brick supplies would have dwindled to famine conditions long before this. As it is, there is a tremendous amount of brick here in market under stack and a large quantity under cover on barges that cannot be moved. Hence the desultory brick demand and unseasonable prices, \$6.75 to \$7.25 being the actual range.

PHILADELPHIA

Philadelphia, Pa.—Prospects for the year of 1913 look good in every branch of the clay working industries. The open winter has enabled many to continue with their building operations and the demand for brick, fireproofing materials, terra cotta, tile, etc., has been greater during the winter months than for several years past. A notable increase in demand is noticed for fire brick, as the iron and steel plants have been busy.

What is known as Jersey hollow tile is being used largely for wall building. Some manufacturers who have begun to make this line during the past year have been unable to meet the demand.

There is an ordinance here requiring the use of flue linings in every chimney built. Fire destroys the mortar in brick chimneys, but the flue lining prevents this and it is a perfect protection. This results in a steady demand for flue linings.

The brick plant of Richard C. Remmey Sons Co. of this city, which was destroyed by fire, has been rebuilt. The plant covered eight acres and every building was destroyed. This was probably the oldest brick plant in the country. The business was started in England, moved to New York in 1672, then in 1840 was moved to Philadelphia.

The Independent Brick Selling Co., of this city, of which J. E. Brady is local manager, has installed new machinery at his plants at Trenton and Bordentown, N. J., and White Hill, N. Y. The company has furnished brick for some large operations and the output of the plants has been increased to 60,000,000 brick.

The Mayer China Co. of Beaver Falls, Pa., is building two new additions to the plant, for a pottery plant, warehouse and office.

The Pennsylvania China Co. of Ford City, Pa., will convert two of its 17 kilns to the manufacture of electrical porcelain supplies.

H. S. White of New Kensington, Pa., has purchased from H. Frank Boyd of Tarentum, Pa., a tract of fine clay land and will build a large brick plant there. It will be a modern plant and will have the best of railroad facilities.

Augustus Reeve of Maple Shade, N. J., has a very large tract of clay land and is doing a very satisfactory business in the making of hollow brick, fire brick and common.

Edward Stokes of this city has moved his office from the Land Title building to the Harrison building. Mr. Stokes has not been in business long but has worked up a very good business in the sewer pipe line.

The plant of the Watertown (Pa.) Brick & Clay Products Co., which was burned, has been rebuilt.

The Juniata Paving Co. of this city laid some 60,000 paving brick at Pottsville, Pa., which were condemned by the state engineers, were ordered to furnish brick up to the specifications or the State would do the work.

Building operations last month exceeded the figures for a corresponding period of many other previous years. The use of burned clay products may be temporarily affected by the proposed strike of the structural iron workers.

John J. McLaughlin and Ben. J. Mitchell, both interested in the McLaughlin Building Material Co., Chicago, are attending the sessions of the Illinois Legislature at Springfield. Mr. Mitchell represents the Twenty-first District and is termed the "dean" of the legislature, being the oldest member in years of service. Mr. McLaughlin represents the Nineteenth District and is a candidate for the position of speaker of the lower house of the legislature. He is putting up a big fight to win this election and his victory would mean a great deal to the clay industry inasmuch as Mr. McLaughlin has been engaged in this line for some years and realizes the advantages of clay products for building and paving purposes.

The Purington Paving Brick Co., at Galesburg, Ill., closed its yard the 16th of January, and the shut-down will continue while necessary repairs are made on the machinery. An officer of the company stated that there is a volume of orders on hand which, were it not for the needed repairs, would keep the plant running all winter.

The Thomas Moulding Co., of Chicago, dealers in face brick, state that the year 1912 developed far better than was expected and produced some very good results. With the aid of the coming Clay Show, it expressed itself as being confident that 1913 business will show an improvement on the last twelve months.

The McLaughlin Building Material Co., of Chicago, deal in all lines of building material as well as paving brick. The notable feature of its business in 1912 was the excellent prices received for the products. This was no doubt due to the abnormal condition of the market. In many months the scarcity of material was marked. This condition brought about peculiar conditions, the contractors gladly taking such brick as the dealer had in stock, instead of selecting samples and having them made up. This was the result of a shortage in several colors and brands of face brick. With the many building operations in sight for the coming year, it is apparent that 1913 will prove to be more satisfactory and successful than 1912 to all dealers and manufacturers.

CHICAGO.

Chicago, Jan. 30.—With the opening of the Clay Product Exposition only a few weeks off, the clayworkers as well as the dealers' time is rather strenuously occupied in preparing exhibits for the coming event. The exposition headquarters report that these activities are not only manifest in common and face brick concerns, but the terra cotta, pottery, fire-brick, sewer pipe, drain tile, and hollow tile people as well, display an equal amount of enthusiasm. The success of any enterprise depends upon the extent of the co-operation rendered; and figuring on this basis, the returns of the coming clay show are assured, it only being a question as to how much greater than last year's it will be. Although the 1912 show was very complete there will be burned clay products shown that have never before been exhibited.

It seems that the clayworker owes considerable gratitude to Mr. O'leary, of this city, for the balmy weather he has enjoyed during the month of January. This particular individual made a wager the eighteenth of November, that this city would not have ten zero weather days this winter. He has thus far succeeded in winning the wager, as the thermometer has registered only one zero day. The clayworker could use advance knowledge of this kind very advantageously, if he were sure it was authentic. Incidentally, this same fellow made another wager at the same time, that there would not be an inch snow fall before Christmas, and he collected on it.

At a recent meeting of the Illinois Society of Engineers and Surveyors, particular attention was given to drastic ordinances, pertaining to fireproofing all buildings erected in Chicago.

The new brick roads in the country near Paris, Newman and Danville, Illinois, are attracting considerable attention just at this time of the year. Other communities which have enjoyed passable roads in summer, but must now give them up in winter, are naturally envious of these favored spots where the road is "good" continuously throughout the entire year, regardless of weather conditions.

WEST VIRGINIA.

Wheeling, W. Va., Jan. 28.—Announcement has just been made officially that B. F. Hodgman, of Moundsville, W. Va., has bought the majority of the stock interest in the plant and business of the Suburban Brick Co., of Wheeling, whose plants are located at Moundsville, W. Va., near Bellaire, O., across the Ohio River from Wheeling. He assumed active management of the company following its annual meeting, which was held January 23. Mr. Hodgman was one of the organizers of the company and was manager of the Moundsville plant. The company also owns a third plant, smaller than the other two, which is located at Mt. De Chantal, W. Va. Charles Carpenter, of Martins Ferry, O., is also interested in the management of these properties. Both are well known brick manufacturers.

The new Washington Brick Co., of Washington, D. C., at its annual meeting held at Alexandria, Va., elected the following board of directors: E. L. White, Nathaniel Wilson, William F. Mattingly, W. T. Galliber, William A. Richards, W. V. Cox, W. B. Hoover and John E. Eckloff.

A deal just completed gives the control of the Davis-Price Machine Company, at New Cumberland, W. Va., to Robert Francis, T. M. Price and William Shaw of Toronto and A. M. Shutters of New Cumberland. Jesse Gilchrist, former member of the firm, retires. The concern will continue to operate under its former name.

A. A. Wheat, of Wheeling, W. Va., who resigned as president of the Suburban Brick Co., will, it is said, soon leave for Florida, where he plans to spend several months looking after his business interests in that section.

Capt. John Porter, the dean of the West Virginia brick manufacturers, whose home and plant is located at Kenilworth, Hancock County, W. Va., has been returned to the West Virginia Legislature. He is a member of the lower house, is a Republican, and ran ahead of the Republican ticket at the November election.

THE PACIFIC NORTHWEST.

Portland, Ore., Jan. 28, 1913.—We have made a close survey of the clayworking industry in this state for the year just passed, and find that the clay industry leads all others in the mineral production. The value of the brick, tile, pottery and other clay products in this state for the year 1912 can be closely estimated as being about \$1,265,000. There are 69 plants in the state manufacturing clay products. The prevailing price for common brick was about \$7.00 in the big cities and about \$9.00 in the smaller places.

The consumption and use of clay products is fast increasing in this state, and the high price of lumber is rather a boost for clay products. There is still a large amount of clay products shipped in from other states and there is still much room for developing the home industry. We have only one sewer pipe plant, one face brick plant making white brick, one stoneware pottery in the state, while there are no paving brick plants. Various clays have been tested with a view of establishing a paving brick plant, but so far no project has been successful. There are no firebrick or terra cotta plants in the state. When the state is better known and the resources more fully developed, such plants will be established in due course of time. The legislature is now considering the establishment of a State Bureau of Mines, independent of the Oregon Agriculture College, with state officials in charge, and an appropriation of about \$25,000 to maintain such a bureau, will doubtless be made. This bureau will have charge of the examination of clay deposits and will be a great help to clayworkers.

The reports of the year just closed show also without exception new records made in every important business in Portland, which indicates that Portland will soon reach a position of leadership over all the cities in the Pacific Northwest. It has put Seattle far behind, and with prestige gained, it will be easy to maintain its superior position. The building construction has made a most gratifying showing, and the total permits amount to 10,789 in number with a total valuation of \$14,781,757, while Seattle has only 9,819 permits with a valuation of \$8,415,325, which is only 60 per cent of the Portland permits.

O. K. Edwards, general manager of the Pacific Face Brick Co., of Portland, recently made a business trip to Spokane, Wash. While there he inspected the various clayworking plants, and is now fully convinced that his plant at Willamina is turning out clay-products which will meet all competition.

W. G. Clarke, who has been operating the plant of the Beaverton Clay Co., of Beaverton, Ore., this last season, has been unable to get sufficient financial backing to bring the contemplated reorganization of this plant to an issue. The clay plant is now again in the hands of the receiver, and so far no new plans have been formulated for its operation next season.

The Oregon Electric has just opened its new depot in Albany, and clay-products have been entirely used in its building. The face brick were furnished by the Newberg Brick & Tile Co. and were of the mission style.

The Forest Grove Brick & Tile Co. was one of the principal creditors in the bankruptcy proceedings of the Shramel & Davis Brothers Lumber Co., of Banks, Ore. It is stated that the matter will be arranged satisfactorily, and that the brick company will not lose much money in the deal.

John Heaps, secretary of the Heaps Brick Co., Ltd., of Vancouver, B. C., recently passed through Portland on his way back from California. Mr. Heaps stated that the brick market in Vancouver was in good shape and their company was preparing for a good season's business.

Mr. August Lovegren, of the Lovegren Lumber Co., made some announcements recently regarding their holdings at Cherry Grove. A new dam will be built for the handling of logs. A mill of large capacity is to be erected this spring, and a brick and tile factory is under consideration, much depending on the outcome of the testing of the clay, which is being done at Portland.

One of the largest projects in the clayworking industry in the Pacific Northwest will soon be started. The holdings of Dr. W. A. Silliman in the Green River district near Black Diamond, Wash., will be taken over by a company which will be incorporated for one million dollars. The incorporators will be principally eastern clay manufacturers. They propose

to manufacture fire brick, paving brick, architectural terra cotta, glazed and enameled brick.

The Montana Clay Products Co., of Great Falls, Mont., has just taken out a West Virginia Charter with a capital stock of \$500,000. The incorporators are James Fitzpatrick, J. G. Wilmot, Patrick B., and M. P. Gallagher and Daniel R. Dawson, all residents of Great Falls. The company will manufacture brick and other clay products.

TEXAS.

Austin, Texas, Jan. 27.—The brick industry in Texas as well as through the Southwest generally is believed to have brighter prospects for the present year than existed at the opening of the last year. There was a steady increase in building trade operations during all of 1912 and this increase, it is believed, will gain in momentum with each successive month of 1913. There is at this time not the semblance of a cloud upon the building trade's horizon. In respect to the financial condition of Texas it is better than ever before in the history of the state and much of the surplus money will be put into new buildings. This fact is assured by the many plans that are being made for the erection of structures of various kinds not only in all the larger cities but in the smaller towns and communities. Brick manufacturers take a very optimistic view of the situation. They show indications of waging a more energetic campaign for the adoption of their material for construction work than has characterized them heretofore.

John A. Barbay of Crescent, La., is arranging to establish a brick manufacturing plant at Port Arthur, Texas.

The Malakoff Pressed Brick Co. of Malakoff, Texas, recently amended its charter changing its name to the Texas Clay Products Co. and increasing its capital stock from \$100,000 to \$250,000. It is stated the company will enlarge its plant at Malakoff and make other improvements to its property.

Plans are on foot for the establishment of a large brick making plant at Sinton, Texas. The company will have a capital stock of \$250,000, it is stated. The names of the parties interested have not as yet been made public, but it is reported that Charles P. Taft of Cincinnati, Ohio, who owns the 160,000-acre ranch and farm property upon which Sinton is situated, will be a large stockholder in the corporation.

The plant of the Cobb Brick Co. of Fort Worth is turning out about 40,000 brick per day. This company opened the year 1912 with a delivery of 1,000,000 brick to the Pierce-Fordyce Oil Association, which were used for the erection of a large oil refinery at Fort Worth. It filled many other large contracts during the year and has many orders ahead at this time. This company also has a large plant that is equipped with machinery and facilities for washing gravel, and does a large business in that line.

The state penitentiary of New Mexico is equipped with a brick making plant that has a daily capacity of about 6,000,000 brick. All of the labor is performed by convicts, from the digging of the clay to the loading of the finished brick upon cars for shipment. The product of this plant is marketed all through the Southwest and in many parts of Western Texas. The clay pit and lime quarry are situated about a mile from the prison, and is said the prisoners who work in the pit are not guarded and there is no espionage kept over the convicts who haul the clay to the manufacturing plant.

OHIO.

Columbus, O., Jan. 26.—Builders and all allied with the construction trade find much in last year's results to make them cheerful. Not only was it the greatest year in building in the city and its suburbs, but there has been a notable tendency toward a better grade of construction. There has been much of the cheap building and there likely always will be, but the reliable contractors have done a creditable year's work and thousands of attractive homes have been added to the city and the nearby territory.

Brickmakers and dealers find much for congratulation in last year's activities. Many makers found themselves sold out recently and there has been a marked increase in the use of brick. In a measure this applies to face brick, for there has been a substantial gain in the popularity of that material for residence construction, although the dealers feel that the revolution in building methods is only started.

William I. Weller, of Zanesville, O., has bought the old plant of the Fisher Veneer Tile & Mfg. Co., and will operate it as a brick plant.

One of the most active clay making plants in Eastern Ohio is the East Liverpool Brick Manufacturing Company, of which Harry Horwell is secretary and treasurer. This plant was formerly operated by Hill & Wallace, building contractors in East Liverpool and the property was recently taken over by a new company, of which Horwell is the head.

The plant is located on the Cleveland & Pittsburgh Railroad, a branch of the Pennsylvania System, and overlooks the Ohio River. There are 11¼ acres in the site and a building 300x200 ft., of frame construction, houses the manufacturing end.

Two grades of clay are mined by the company, one being a white fire clay and the other a red clay. These give a varied production of brick, the latest being a white face brick made from the fire clay vein.

There are three veins of high grade fire clay to be found here, which is mined by an electric drill. The clay is hauled to the plant in cars made by the Atlas Car & Mfg. Co. The haul is a short one, the distance from the mine to the dry pans being but 50 feet. Occasionally the clay is weathered, but more frequently it is not, being dumped from the cars into a 9-foot Stevenson pan having a capacity of 50 tons per day.

A piano wire screen made by the Louisville Machine Company, Louisville, O., is used exclusively by this concern. The stiff-mud process is used, the brick being made in a Freese machine and cut by a Freese automatic cutter.

The 50-capacity drier cars are of the Atlas single-deck type. The five-track drier is of brick construction, built by the original company from private plans. The drying process requires about 42 hours, gas being the fuel used. The five down draft kilns are equipped for natural gas burning, about one million feet being used for the firing of each kiln. Gas is also used for firing the 150 h. p. steam engine.

The plant is operated continuously throughout the year. It was built in 1900, increased in 1904 and other improvements contemplated will increase its capacity materially. The officers of the company are: President, John Horwell; vice-president, Jason H. Brooks; secretary and treasurer, Harry Horwell; general manager, Wm. Bird.

The annual meeting of the stockholders of the Acme Brick Company was held in the offices of the company, at Marietta, O., and the following were elected director: E. Clark, Jr., A. L. Gracey, W. H. H. Jett, W. A. Campbell, W. L. Hyde and John Kaiser. E. Clark, Jr., was elected president; A. L. Gracey, vice-president; John Kaiser, secretary; and W. H. H. Jett, treasurer and general manager. The work of the year was gone over in detail, the report showing that there were over four million brick made and sold during 1912, at this plant, enough to more than reach to New York city, if laid end to end.

ST. LOUIS, MO.

St. Louis, Mo., Jan. 27.—Building improvements, including the erection of new buildings and alterations for which permits were issued, increased \$2,068,847 in St. Louis in 1912 over 1911. The report was compiled from figures submitted in 1912 with applications for permits, and showed the total estimated cost of alterations and new buildings to be \$20,676,403 as compared with \$18,607,555 for 1911.

A total of 8,593 permits were issued, as compared with 8,940 for the year previous.

The total estimate cost does not include the \$2,600,000 to be spent on the Monward Realty Company building at Broadway and Olive Street.

Alterations in 1912 totaled \$1,893,685 in estimated cost and 2,567 alteration permits were issued, as compared to 2,658 permits for an estimated outlay of \$2,033,073 for 1911. The

alterations were chiefly on manufactories, workshops and small store buildings.

The estimated cost of brick dwellings was \$3,507,535 as compared with \$4,497,307 for brick tenements. A total of 1,028 brick dwellings were authorized and 739 tenements of the same material.

Fewer permits were issued for amusement houses, for small stores, frame tenements and school houses, municipal buildings numbering ten, and at an estimated cost of \$89,980 were authorized. Five permits were issued for hospital construction at a cost of \$480,000, nine for churches to cost \$205,000, and fourteen for school houses at an estimated cost of \$1,346,900. The erection of twenty-two mercantile and office buildings was authorized, the cost approximating \$3,205,270.

Hotel facilities in St. Louis have been curtailed rather than increased, the St. Nicholas and Southern Hotel, two of the largest in the city, having been closed. Plans rapidly are being brought to a focus for the erection at the northeast corner of 12th and Olive streets of an 18-story hotel, the building it is said will cost \$1,000,000. Plans for hotels are the distinguishing feature of the program for the coming year in St. Louis building circles.

A number of buildings are being planned for retailers and wholesalers whose growth in St. Louis has set a new pace for business expansion.

Exemplifying the demand for them, buildings of this character are being leased as fast as they are completed, in many instances, from the plans before construction has been started.

Apartment buildings will lead operations in the residential district, according to the forecast. Drawings have been made for several elevator apartment buildings, ranging from six to twelve stories, which will be erected as soon as available sites can be found.

The sewer department made a record during the year of 1912 by building 45.89 miles at a cost of \$1,701,693. The city improved 25.10 miles of streets which was a decrease from the former year. The department improved 14.04 miles of alleys, which was a slight increase over the work of the previous year, both of which consumed considerable brick.

At the annual election of officers of the Laclede-Christy Clay Products Co. the following were elected: Directors, James Green, John L. Green, Richard D. Hatton, Montague Lyon, William Lyon, William T. Christy and L. Le Beau Christy; president, John L. Green; vice-president and general manager, Richard D. Hatton; vice-president, Montague Lyon; secretary, W. J. Westphalen; treasurer, Richard D. Hatton; assistant secretary and assistant treasurer, William T. Christy; gas engineer and manager of chain grate stoker department, Roger W. Polk; general manager of sales department, Henry K. Lackland; manager of glass industry department, John H. McKelvey.

The annual directors' meeting of the Banner Clay Works, a St. Louis corporation with a plant at Edwardsville, Ill., was held in the offices at Edwardsville. Plans for increasing the capacity of the plant and rearranging the buildings were considered. Several changes will be made to avoid future inundations. The kilns have been filled with brick for early spring delivery and the plant closed for the winter.

The St. Louis Board of Public Improvements has set February 11 as the date for receiving bids for street improvements and construction, at a total cost of \$379,645.

A fire on Monday, December 9, destroyed the clay sheds at the Illinois branch of the Hydraulic-Press Brick Co., located at Collinsville, Ill. The fire was checked before it reached the machinery buildings. Superintendent Wm. H. Thompson estimates the loss at \$2,500.

Plans for the new building of the Monward Realty Co., at the northeast corner of Broadway and Olive street, have been submitted to the Commissioner of Public Buildings for inspection. The plans which provide for a 19-story building, about 250 feet high and a tower projecting 180 feet higher. The builders have not applied for a permit, as the issue of a permit for a building of unusual height is beyond the jurisdiction of the Building Commissioner, and could be obtained only by a special ordinance by the Municipal Assembly.

A building permit has been granted to the Board of Education for the Southern High School, the estimated cost being \$666,000.



BRICK

and CLAY RECORD

Volume XLII

CHICAGO, FEBRUARY 15, 1913

Number 4

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CHICAGO—MARVELOUS CITY OF BURNED CLAY



Above may be seen some interesting points in Chicago and some of her numerous sky-scrapers. No. 1 is the Railway Exchange Building on the corner of Michigan Ave. and Jackson Blvd. No. 2, a busy portion of State Street, in the shopping district. No. 3, The People's Gas Light and Coke Co.'s New Building, Adams St. and Michigan Ave. No. 4, one side of a Chicago Canyon, La Salle Street, famous for its tall office buildings. No. 5, The Woman's Temple, La Salle and Madison Sts. No. 6, a scene at the Union Stock Yards. No. 7, 15-story International Harvester Building on Michigan Ave. Vast quantities of Clay Products were consumed in the construction of the above buildings, which are splendid types of modern fireproof construction.



VOL. LXII.

CHICAGO, FEBRUARY 15, 1913

Number Four

CLAY SHOW BRINGS EXHIBITS FROM MANY LANDS

Big Exposition Opens February 26, at the Coliseum in Chicago, With Greatest Display of Clay Products Ever Shown in One Building—More Than 250,000 Visitors Are Expected



ITH exhibits from every state in the Union and representative ones from many foreign countries, the Second Annual Clay Products Exposition opens Wednesday, February 26, at the Coliseum, Chicago. For eleven days, in-

cluding a Sunday that intervenes, the great show will be in progress, and it is estimated that fully 250,000 visitors will see this, the most stupendous display of burned clay ever shown the public.

As a part of the eleven days' program there will be the annual conventions of the National Brick Manufacturers' Association, the National Paving Brick Manufacturers' Association, the Building Brick Association of America, the American Face Brick Association, the Western Paving Brick Association, the International Clay Products Bureau and the adjourned sessions of the several state and local associations.

For more than a year, or since the close of the last Show and conventions, preparations have been under way for the big events. With the last Clay Show as a precedent to follow the Exposition managers have striven to eclipse the first Exposition and have spared no expense or labor in accomplishing this.

Last year the Clay Show was pronounced to be the

greatest industrial show ever held in the Coliseum. When such shows as the Automobile, the Municipal, the Lumber, the Cement, the Machinery, and all the other shows that have occupied this great exposition hall annually, are considered in this broad claim, it gives one

an idea of the immensity and importance of the Clay Products Exposition.

While the first Show was a great one and successful in every phase the Exposition management promises this year's to be even greater.

In the decorations of the Coliseum alone the improvement will be wonderfully noticeable. One of the greatest artists in this line of work has been secured and the decorative scheme he has submitted promises to make the Coliseum a perfect picture. Thousands and thousands of electric lights will illuminate the great building, and these, with the many thousands of yards of bunting, the thousands of flags, the elaborate mural decorative scheme, and all the other details, will make the great building a blaze of glory.

The same master hand has superintended the general arrangements of the exhibits, so that these will be in perfect harmony and meet with the approval of all.

The first scene to greet the eye of the visitor as he enters the Coliseum

NUTSHELL FACTS ABOUT THE SHOW AND CONVENTIONS.

THE CLAY SHOW.

OPENING DAY—Wednesday, Feb. 26.

CLOSING DAY—Saturday, March 8.

DURATION—Eleven days, including Sunday.

ESTIMATED ATTENDANCE—Two hundred and fifty thousand.

EXHIBITS—Manufactured clay products of every conceivable nature.

ADMISSION—Adults, 50 cents; children, 25 cents.

THE CONVENTIONS.

NATIONAL BRICK MANUFACTURERS' ASSOCIATION—Chicago, March 2-8, during the Second Annual Clay Show. Headquarters at the Congress Hotel. T. A. Randall, Indianapolis, Ind., secretary.

BUILDING BRICK ASSOCIATION OF AMERICA—Chicago, March 5-6, during the Second Annual Clay Show. Headquarters at the Congress Hotel. J. P. B. Fiske, secretary, Flatiron Building, N. Y.

NATIONAL PAVING BRICK MANUFACTURERS' ASSOCIATION—Chicago, March 3-4, during the Second Annual Clay Show. Headquarters, Congress Hotel. Will P. Blair, secretary, Engineers' Building, Cleveland, Ohio.

AMERICAN FACE BRICK ASSOCIATION—Chicago, during the Second Annual Clay Show, March 3-7. W. H. Hoagland, Hartman Building, Columbus, Ohio, secretary.

NATIONAL CLAY MACHINERY ASSOCIATION—Chicago, March 4-5, during the Second Annual Clay Show at the Congress Hotel. W. H. Durbin, secretary, Anderson, Ind.

CANADIAN CLAY MANUFACTURERS' ASSOCIATION—Meets at the Congress Hotel in an adjourned session, March 5.

ILLINOIS CLAY MANUFACTURERS' ASSOCIATION—Meets in adjourned session at the Congress Hotel, March 4.

IOWA CLAY MANUFACTURERS' ASSOCIATION—Meets in adjourned session at the Congress Hotel, March 5.

WISCONSIN CLAY ASSOCIATION—Meets in adjourned session at the Congress Hotel, March 6.

through the main entrance will be a paved pergola. On either side rise great fountains. From these will spout jets of myriad-lighted water. Immense columns of brick mark the beginning of two long walls of brick which enclose the driveway which leads back the full width of the Great Coliseum to the Old English gate.

Just before this gate, which is in itself a triumph of architecture, there is a sunken pool. In either side of this driveway, panels of brick will be placed representing the product of several hundred plants scattered throughout the United States, the far Pacific Coast being represented as well as the Central West, the South and the East.

The Old English gate will open into the Exposition room proper and from there the visitor will begin a tour of the various exhibits, many of which will represent the outlay of thousands of dollars.

The pergola entrance will be, perhaps, the leading decorative scheme of the Exposition. It was made possible by the Chicago Face Brick Association, and cost more than \$20,000 to prepare. This handsome feature is a part of the general decorative scheme of the Exposition and was contributed by the Chicago Face Brick Association for the purpose of doing its share, in the attempt to make the Second Annual Clay Show a model for all future expositions to pattern after. The Association showed its generosity and broad-mindedness by submerging its individuality in the exhibit. Despite the fact that thousands of dollars were expended and that the cost of this great display will have to be borne by each of the seven firms that constitute the organization, the firm name of these members will not appear anywhere on the exhibit and the only mark to indicate that it is not a part of the Exposition's decorative scheme proper will be an electric sign bearing the words, "Chicago Face Brick Association."

Every available inch of the great floor space of the Coliseum has been reserved. Many of the exhibitors of last year, in addition to reserving the same space they

had at that time, have engaged additional booths, and, judging from the plans submitted to Secretary Hopley of the Exposition management, there will be some decided surprises in store for those who attended last year.

Special days have been set aside for the various state organizations. March 4 has been given to the members of the Illinois Clay Manufacturers Association and will be known as "Illinois Day." "Iowa Day" will fall on March 5. The following day, March 6, was set aside as "Wisconsin Day." The other days are: Ohio, March 3; Minnesota, March 7; New York, Feb. 28; Pennsylvania, March 4; Canadian Day, March 5.

These are the only states or state organizations that have signified an intention to attend the Clay Show and Conventions in a body.

The various departments of the exhibits will be more evenly distributed this year than last. Some of the branches of the clay product industry were not represented at the first show, but practically all will have exhibits or representation at the forthcoming event. This is particularly true of the encaustic tile people. The National association which embraces the manufacturers of this class of goods has been working hard to arrange a suitable exhibit and its labors have not been in vain.

The pottery interests, too, will have a very elaborate exhibit and it is more than likely that this display will prove one of the really interesting features of the Show.

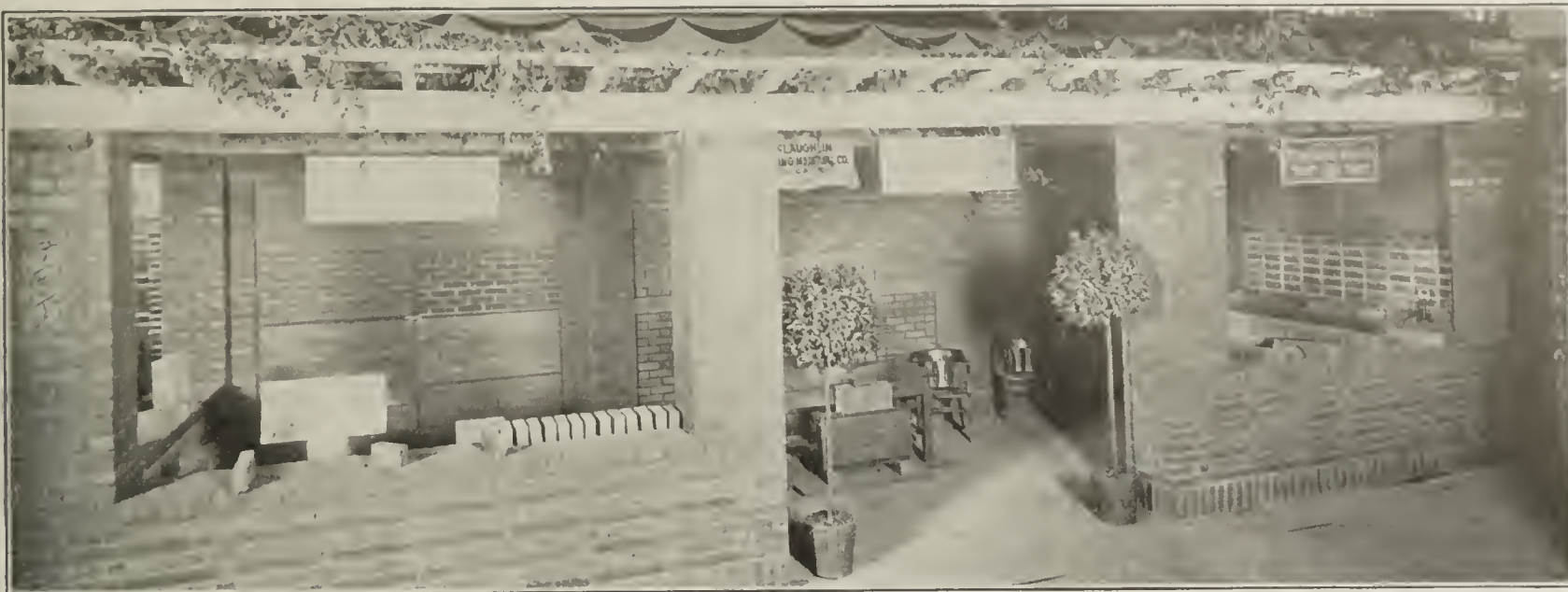
In the Good Roads department there will be three special exhibits. One of these will be that of the Bureau of Standards of the United States, under the direction of Prof. A. V. Bleining. This exhibit will show the imperviousness and durability of the brick paved street and road and sample sections of streets in different sections of the country will be exhibited to prove these points. The Bureau also will have a special exhibit of building material to show the superiority of burned clay.

This department will prove of great value to builders and contractors and will prove of equal interest to clay-workers and particularly to brickmakers.



The Roof Beautiful—Exhibit of Roofing Tile Made By the Ludowici-Celadon Co. at the First Clay Show.

ONE OF THE ATTRACTIVE DISPLAYS AT 1912 SHOW



Pergola In Which McLaughlin Building Material Co. Displayed Many Varieties of Clay Products at Last Year's Show.

Another exhibit in the Good Roads department will be that of the National Paving Brick Manufacturers Association. This, probably, will be the most elaborate of the three, as Secretary Blair has been busy for several months collecting photographs and material for the exhibit. The display will occupy several booths and will show the proper construction of a brick street under the Association's No. 1 specifications. Included in this display will be a special one by the various manufacturers of the Dunn Wire-Cut-Lug Block.

The third exhibit in the Good Roads section will be by the Western Paving Brick Association. This, like that of the National Association, will thoroughly present in a most convincing manner the superiority of the vitrified paving block.

As an auxiliary to these exhibits there will be several individual displays by paving brick manufacturers.

One of the most important branches of the clay industry, the face brick interests, will be represented by more than 300 individual plants. These displays will be a revelation to the buying public and it is expected that the contractors and architects of the nation will take advantage of this opportunity to make a special study of burned clay as a building material, as they did last year.

The hollow building tile interests, the sewer pipe manufacturers and the drain tile interests will have elaborate displays, and the common brick people will be in evidence.

In roofing tile there will be a creditable showing and, as fire-proofing plays an important part in the construction of a fire-resisting home, these displays should prove of inestimable value to the prospective home-builder as well as to architect and contractor.

The stoneware and pottery and the china and fancy decorative ware departments will be of unusual interest and some of the exhibitors have gone to considerable expense and trouble in making preparations.

The show this year extends over a period of several

days longer than the first show and the management, profiting by last year's lesson has engaged the Coliseum for 21 days, thus giving the exhibitors plenty of time to install their displays and take them out.

SHOW MANAGEMENT PICKS PUBLICITY MAN.

Carl Young, a young newspaper man of Bucyrus, Ohio, has been selected by Secretary F. L. Hopley, of the Clay Products Exposition Company, to assist in the publicity work of the Second Annual Clay Show. Mr. Young has already entered into the work and is located in the general offices of the Exposition company, 816 Chamber of Commerce Building, Chicago.

There is a great deal of untiring labor connected with the publicity movement of a great exposition like the Clay Show and whatever success is secured is largely due to the aggressiveness of the man in charge of the work, for the greater the attendance the greater the value of an industrial exposition and the only way to get the people to visit a show is to advertise it extensively.

The publicity manager or press agent sees that the people are kept thoroughly informed and this is no small matter when his field is the nation. Thousands of columns of reading matter must be prepared for the daily press of the country.

No one man can do all that is required of him in a great publicity work connected with an exposition and therefore a corps of competent assistants have to be employed to

look after details. These employees aid in the preparation of "copy," the engraving of cuts, the mailing of thousands of letters, and attending to the other hundred and one other things that come up daily in the routine work of the bureau.

Mr. Young, having had considerable newspaper experience, is particularly well-equipped for the work and undoubtedly will spread the glad tidings of the Exposition to all corners of the earth.



Carl Young, Assistant in Publicity Department of the Clay Products Exposition Co.

CONVENTIONS ADD TO CLAY SHOW CROWD

N. B. M. A. and the Other National Organizations Will Meet in Chicago During Exposition Week



FIVE national clay products associations and at least six sectional organizations will meet in Chicago during the progress of the Second Annual Clay Show. The national bodies that will hold their conventions at that time are:

The National Brick Manufacturers' Association, which will have headquarters in Room 1002, Congress Hotel. March 2-8 is the date set.

The Building Brick Association of America, which will have its headquarters in Room 1173, Congress Hotel. It meets March 5-6.

The National Paving Brick Manufacturers' Association, which will have headquarters in Rooms 1124-1126. It meets March 3-4.

The American Face Brick Association, which also will have headquarters at the Congress Hotel. Meets March 3-7.

The National Clay Machinery Association, which meets March 4-5, has not reserved headquarters but will have rooms at the Congress.

The Canadian Clay Products Manufacturers' Association, which meets in an adjourned session on March 6, has made application for room reservation but the same has not been allotted.

The sectional organizations that either meet in regular session here at the same time or in adjourned meetings are:

The Western Paving Brick Manufacturers' Association.
The Eastern Paving Brick Manufacturers' Association.
The Brick Builders' Bureau of San Francisco.
The Northwestern Clay Association.
The Chicago Face Brick Association.
The Cleveland Face Brick Association.
The Ohio Face Brick Association.
The Ohio Tile and Clay Workers' Association.
The Illinois Clay Manufacturers' Association.
The Iowa Clay Products Manufacturers' Association.
The Wisconsin Clay Manufacturers' Association.

The programs of those associations that have been completed and made public indicate that an unusually interesting time awaits the clayworkers, as practically every phase of the industry will be discussed.

The official announcement of the N. B. M. A. from which the following is taken, gives only that portion of the program completed to date:

Clayworkers have been granted the privilege of a round-trip rate at two cents per mile for distance traveled in the territory of the Central Passenger Association. Other pas-



Main banquet room at Auditorium Hotel, where the Ancient Order of Chaldeans will be launched.

seuger associations have been requested to concur, so it is anticipated that this round trip rate will prevail from all principal points. If, on inquiry from the local agent, members find that the rate is not obtainable at their station, mileage books can be used, thus obtaining the same rate and the added privilege of variable routes and stop-over privileges at the pleasure of the delegates. Those who wish to visit clay plants en route, either going or coming, will find the latter an important feature.

All N. B. M. A. sessions and functions will be held at the Congress Hotel. It is located in Michigan Boulevard, Chicago's most aristocratic thoroughfare, overlooking Lake Michigan, and is in the center of the city's activities. It is but a few blocks from the Coliseum, and is convenient to all places of amusement, depots and best shopping districts.

The Annual Banquet or Associational Dinner will be served Thursday evening at 7:00 p. m., in the banquet hall of the Congress Hotel. It will be preceded by a reception in the Elizabethan Room, beginning at 6:00 p. m. Following the rule which has prevailed for several years, it will be a subscription banquet under the direction of the N. B. M. A. Executive Committee, assisted by the local entertainment committee. The Hon. Wm. P. Williams, of Chicago, will preside as toastmaster, and other speakers will respond to toasts. The ladies will grace the occasion as usual.

Sunday, March 2, the Rev. F. W. Gunsaulus will deliver a sermon on the subject, "Earthenware, Broken and Unbroken," at the Auditorium Theater, which is just across the street from the Congress Hotel.

The program in full follows:

First Session—Wednesday, March 5, 1913.

10:00 a. m.

Prayer.

Welcome to Chicago, by His Honor, Mayor Carter H. Harrison.

Response by Chas. Deckman, Cleveland, O.

President's Annual Address, Charles A. Bloomfield, Metuchen, N. J.

Report of Treasurer, John W. Sibley, Birmingham, Ala.

Election and installation of officers and members of standing committees.

"The Field of Usefulness of the National Brick Manufacturers' Association," Prof. Edward Orton, Columbus, O.

Report of Committee on Technical Investigation, Ross C. Purdy, Worcester, Mass.

Rules of Procedure.

All formal resolutions shall be presented in writing.

At the close of each essay or address an opportunity will be afforded for a full discussion of the subject under consideration.

No papers or essays not included in the regular program will be heard, unless previously submitted to and approved by the Executive Committee.

Convention Papers.

"Reminiscences," C. H. Frost, Los Angeles, Cal.

"The Brick Salesman," Albert D. Klein, Baltimore, Md.

"Our National Fire Waste, Its Cause and Remedy," C. J. Doyle, Chicago, Ill.

"Competition and Co-Operation," M. E. Gregory, Corning, N. Y.

"Prevention of Whitewash," Charles Hoshour, Oklahoma City, Okla.

"Some Investigations of the Clay Products Section, Bureau of Standards" (Illustrated), Prof. A. V. Bleining, Pittsburgh, Pa.

"The Training of the Technical Engineer for Ceramic Service," Prof. H. K. Benson, Seattle, Wash.

"Tests of Two Brick Piers of Unusual Size" (Illustrated), J. E. Howard, Washington, D. C.

"Fire Insurance for Brickmakers," Walter T. Campbell, St. Louis, Mo.

"Some Peculiarities of Face Brick Manufacture," Douglas Stevens, Cayuga, Ind.

"European Versus American Methods of Manufacturing Clay Products" (Illustrated), G. W'son Cronquist, Torekøw Sweden.

"Electric Drives in Clayworking Plants" (Illustrated), Thomas E. Simpers, Pittsburgh, Pa.

"The Business Man and the Trend of Modern Legislation," A. D. R. Johnson, Raleigh, N. C.

"Kiln Troubles and Remedies," General Discussion led by Anton Vogt, Peru, Kas.

In addition to the foregoing addresses and papers, various questions pertaining to brickyard practice will be discussed.

An informal reception will be held in the Elizabethan Room at the Congress Hotel at 8:00 p. m., to be followed at 9:00 by a smoker in the Gold Room at the Congress Wednesday. The badge or the number button of the N. B. M. A. is the only requisite of admission.

An appropriate souvenir badge and number button will be presented to each delegate and visitor, with the compliments of the Chicago Clay Club, a local organization, the sole purpose of which is to welcome and entertain visiting clayworkers convention week. These badges and number buttons will be distributed by the Secretary of the N. B. M. A., whose headquarters will be in parlors 1102, where visitors are requested to call and register on arrival.

All sessions of the National Convention are open to the public. Those who are interested directly or indirectly in clay work of any character are invited to join the association and attend the convention.

The programs of the other associations, so far announced, are given elsewhere. Secretary Fiske of the Building Brick Association of America writes under date of Feb. 13 that he is still at work on the program. The regular publicity session will be held Wednesday, March 5, at 2:30 p. m. The business session, at which an election of officers will be held, will occur Thursday at the same hour.

Most of the associations will devote considerable of their time to the discussion of the selling end of the business. Well-known authorities on salesmanship and general publicity work will address the various organizations and the clayworker who has worked out a system of his own based on practical experience in the industry will be heard from.

PAVERS TO DISCUSS THE ENGINEERS.

National Association Meets in Chicago March 3.—Several Important Subjects to be Considered.

A closer and more intelligent relationship between the engineer and the manufacturer will be the chief topic discussed by the members of the National Paving Brick Manufacturers Association at its annual convention, which will be held in Chicago, during the Clay Show, beginning on the morning of March 3 and continuing three days.

In the program which was sent out this week, President Charles J. Deckman and Secretary Will P. Blair, make this announcement:

"The Association believes that the public is best served by a mutually intelligent co-operation of the engineer and the manufacturer of material for municipal use. We have, therefore, arranged a program for our Ninth Annual Meeting which, aside from our regular order of business, it is believed, will serve to bring about a closer co-operation between the engineers and manufacturers.

greatly to the decided advantage of the tax-payer whose interests both are striving to serve."

The program in full follows:

MONDAY MORNING, MARCH 3, 1913

Ten O'Clock A. M.

Calling the Roll of Membership
Reading of Minutes
Admission of Members

MONDAY AFTERNOON, MARCH, 3

Presidents Annual Address
Chas. J. Deckman, President
Resume of Association Work
Will P. Blair, Secretary
Publicity for our Product
H. H. McDonald, Ass't Secretary

TUESDAY MORNING, MARCH 4

Reports of Officers
Reports of Committees
Appointment of Committees
Unfinished Business
New Business
Election of Officers
The Relation of the Trade Journal to Municipal Work
S. T. Henry

TUESDAY AFTERNOON, MARCH 4

The Psychology of Competition
E. L. Middleton, Chicago, Ill.
The Engineer's View
H. M. Waite, Chief Engineer, Cin.
The Manufacturer—His Hindrance and His Aid
E. B. Schmidt, Asst. City Engineer,
Louisville, Ky.
The Development of the Proper Relation between the
Paving Brick Manufacturers as Represented by their
Salesman and the Engineer in charge of Paving Work
E. P. Foster, Youngstown, Ohio
Association Membership
Eben Rodgers, Alton, Ill.

WEDNESDAY MORNING, MARCH 5

Unfinished Business

B. B. A. IS TO AMEND BY-LAWS AT SESSION.

Proposes to Consider Resolution Which Empowers Directors to Designate Place of Annual Meetings.

The Building Brick Association of America will hold an important meeting this year, there being several questions to be considered when the annual session is held in Chicago March 6 during the Clay Show.

In a bulletin sent out by President Simpkins and Secretary Fiske announcement is given of a resolution which will be presented at the meeting which will make a radical change in the method of fixing the meeting place of the annual sessions in the future.

As the by-laws now stand the B. B. A. is forced to meet wherever the National Brick Manufacturers Association chooses its annual meeting place. The proposed amendment will permit the board of directors to select any place hereafter that may be deemed advisable. The resolution in full follows:

"Resolved, that the second paragraph in Article IV of the By-Laws of this Association be amended to read as follows:

"There shall be a Board of Directors of twenty-seven, an Executive Committee of seven, a Membership Committee of three, and a Nominating Committee of five."

"Resolved that Article X be amended to read as follows:

"The Annual Meeting of this Association shall be held at such time and place as may be determined by the Board of Directors. At least thirty days written notice of the

time and place of said meeting shall be mailed to each member."

In addition to the above resolutions there will be several other important matters considered, chief of which will be the proposition to re-organize the Association along broader lines. The suggestion has been made that the Association enlarge its field of usefulness and, instead of confining its work exclusively to building brick, to take in all clay products.

EASTERN PAVERS WAR ON FAKERS.

Owners of Plants in Ohio, New York and Other States Meet in Pittsburgh to Discuss Plans.

There is going to be something doing in the paving brick business this season, if the plans of the manufacturers of Eastern Ohio, Western Pennsylvania, West Virginia and New York have anything to do in the matter. A meeting of manufacturers who represent about sixty per cent of the output of this product, in that section, met at the Ft. Pitt Hotel in Pittsburgh, during the afternoon of Feb. 10, and plans were at once laid to obtain uniform contracts between contractors and manufacturers to establish standards, and above all to drive the "faker" out of business. To all of which every person present agreed."

C. P. Mayer, president of the C. P. Mayer Brick Manufacturing Co., of Bridgeville, Pa., and one of the best posted brick manufacturers in the country has been made temporary president of the new organization, which will maintain permanent headquarters in Pittsburgh. C. A. Young, associated with the Pittsburgh offices of the Mack Manufacturing Co., has been elected secretary.

A committee has been appointed to draft a constitution and by-laws, and it is possible that this committee will report within a few days, or just before the eastern delegates leave for the Chicago convention.

Following the Chicago convention, there will be a general meeting of the new association, and this session will very likely be held in Harrisburg, Pa., However, definite decision on this matter is to be announced at the Chicago convention.

H. H. McDonald, assistant secretary of the N. B. M. A., of Cleveland, was in Pittsburgh attending this meeting, Secretary Will Blair being unable to attend.

FACE BRICK ASSOCIATION MEETS MARCH 5.

Organization Work, Publicity, Cost Systems and Other Vital Questions to Be Considered.

J. M. Adams, president of the American Face Brick Manufacturers' Association, has completed the program for the annual meeting of the association, which will be held in Chicago, at the Congress Hotel, March 5 and 6, during the progress of the Clay Show. The program covers two days' sessions and is full of interesting subjects.

After call to order, President J. M. Adams, secretary and general manager of the Ironclay Brick Company, Columbus, Ohio, will deliver his annual address in which he will review the work done by the organization during the past year.

Topics to be discussed will be "Reciprocal Fire Insurance," "The Value of Organization to the Brick Manufacturer," "Distributing Agencies and Districting the Same," "The Necessity of an Efficient Cost System in

Manufacturing," "The Relation of the Brick Manufacturer to the Machine Man," "The Value to Face Brick Manufacturers of a Tariff Bureau."

INTERNATIONAL GOOD ROADS CONGRESS.

To Hold Fifth Convention in Chicago Feb. 26 to March 2.
Prominent Speakers Engaged.

The Fifth International Good Roads Congress, to be held in Chicago, at the La Salle Hotel, from Feb. 26 to March 2, will far surpass in importance and interest the Fourth International Congress, which was also held in Chicago in the fall of 1911 and was attended by representatives of forty different states, as well as many from other nations.

An excellent program and entertainment of the guests has been arranged for, and many distinguished speakers will participate, including Mrs. Pennybacker, the president of the General Federation of Women's Clubs, as well as the representatives from many foreign countries, who will speak at the banquet on the opening evening.

There is no question of greater importance to American people than good roads. Last year, as a result of the movement initiated thirteen years ago by the National Goods Roads Association, and carried on ever since by many other similar organizations, more than one hundred millions of dollars were devoted to and expended in the construction of good roads.

The National Good Roads Association has held more than a thousand good road conventions in every state of the union and has organized hundreds of state and county good roads associations. The meeting this year will be of unusual importance, and with the municipal display at the Clay Show will attract the attendance of engineers and municipal authorities from all parts of the country.

**JOIN THE ANCIENT ORDER OF CHALDEANS.
CLAYWORKERS!**

See Page 220.

MACHINERY MEN MAKE RESERVATIONS.

Obtain Quarters in Congress Hotel, Where They Extend Invitation to Visitors to Make Themselves at Home.

Although the Clay Show is exclusively for the exhibition of clay products, and the machinery men were barred as exhibitors, practically every concern that makes or deals in machinery and accessories for the clay plant will have representation both at the Show and the conventions.

Many of the machinery concerns will display working models of their products wherever this is practical.

Only a few have made their reservation for hotel rooms at this writing, and this list, complete as far as it goes, is as follows:

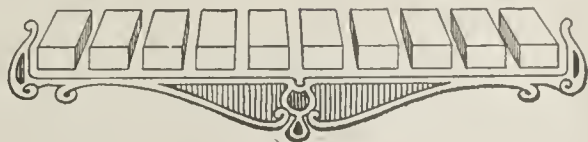
American Clay Machinery Co., rooms 112-114.
Bonnot & Co., rooms 1174-1176.
John C. Boss, room 1148.
Chisholm, Boyd & White Co., room 1152.
Chamber Bros. & Co., room 1175.
Denison Ceramic Engineering Co., room 1158.
J. D. Fate Co., rooms 1118, 1120, 1122. Their selling agents, the Manufacturing Equipment Co., will share these quarters.
E. M. Freese & Co., room 1156.
Imperial Belting Co., room 1132.
G. W. Raymond & Co., parlors B-Z and B-4.
Taylor Instrument Co., room 1130.
Thew Steam Shovel Co., room 1160.

The Murray Iron Works Co. will entertain its friends at its Chicago office, on the fourteenth floor of the Fisher building.

Others who have reserved rooms at the Congress Hotel are as follows:

Ancient Order of Chaldeans, room 1128.
Brick and Clay Record, room 1154.
Building Brick Association of America, room 1173.
Chicago Clay Club, rooms 1136 and 1162.
National Brick Manufacturers' Association, room 1002.
National Paving Brick Manufacturers' Association, rooms 1124-1126.

A complete list of all reservations will be printed in the daily edition of "Brick and Clay Record."



HOW CHICAGO WILL ENTERTAIN VISITORS TO BIG SHOW



BANQUETS, theater parties, special entertainments, excursions, sight-seeing auto trips—these are some of the things in the way of entertainment the Chicago Clay Club has arranged for the Clay Show and Convention visitors, and he who fails to have a good time, no matter how super-critical he may be, will be suffering from an incurable grouch and may be considered in the hopeless class.

The annual banquet of the National Brick Manufacturing Association, of course, is the central feature of the entertainment program. This will be given Thursday evening, March 6, in the Gold Room of the Congress Hotel, where the Association will have its headquarters. As on previous occasions, the banquet will be on a most elaborate scale.

The Clay Club has selected an unusually large enter-

tainment committee, and beginning with the opening day of the Clay Show the members of this committee will be in evidence everywhere. They will be at the depots, the hotels, on the streets—wherever a clayworker may need them.

The first few days will be given over to sight-seeing, and every facility will be afforded the visitors to get acquainted with Chicago and its suburbs.

Wednesday evening, March 5, will be the first important number on the entertainment program. On this occasion there will be the launching of the Ancient Order of Chaldeans, a new secret society something on the order of the Hoo Hoos of the Lumbermen, or the Sons of Jove of the electrical people. Any reputable clay manufacturer, or member of the allied industries, will be eligible to membership in this order, which is expected to furnish more real fun for the visitors than any other

THEIR BUSINESS IS TO MAKE YOU HAPPY



C. L. Rorick, on Entertainment Com.

L. D. Binyon, Chairman Entert'm't Com.

C. H. Alsip, on Entertainment Com.

one feature of the week. A complete story of the Ancient Order of Chaldeans will be found on another page.

The initiation of several hundred members will be followed by a buffet banquet and smoker, and the evening's entertainment will close with a cabaret or vaudeville show. The menu for this supper follows:

Celery	Olives
Chicken Salad a la Ceramic	
Assorted Sandwiches, Pug Mill Style	
Brick Ice Cream	
Three-layer Shale Cake	Terra Cotta Pie
Coffee	Cigars
Etc.	

Thursday afternoon the lady visitors will be entertained at a matinee at the Princess Theater, where the play "Bought and Paid For" is having such a successful run.

Thursday evening the banquet of the National Brick Manufacturers' Association, already mentioned, will be held.

Friday evening a smoker and vaudeville show will be given in the Gold Room of the Congress Hotel for the male visitors.

In addition to these features especially arranged for the visitors there are the usual places of amusement and entertainment for which Chicago is celebrated.

The Clay Club has paid special attention to the entertainment of the lady visitors. A special room in the Congress Hotel, No. 1162, has been reserved as headquarters for the ladies and maids who will be in attendance. Every comfort and convenience will be provided in these quarters.

Miss Grace C. Kimbell, 2415 Smalley Court, heads the ladies' entertainment committee, which has been made extra large, so that the visiting ladies will have individual attention. Those who will assist Miss Kimbell in entertaining the visitors are:

Mrs. William Schlake, 1602 Diversey parkway; Mrs. Joseph Hock, 417 South 45th avenue; Mrs. A. Loeffler, 1715 Chase avenue; Mrs. E. K. Cormack, 6510 Yale avenue; Mrs. Charles Woodward, 137 South Grove avenue, Oak Park; Mrs. James A. Hogan, 5622 Indiana avenue;

Mrs. Margaret Sullivan, 930 West Garfield boulevard; Mrs. F. A. Schutte, 6118 Vincennes avenue; Mrs. F. S. Kenfield, 1623 East 51st street; Miss Ruby Kenfield, 1623 East 51st street; Mrs. C. L. Rorick, 1015 Winona avenue; Mrs. H. H. Rosenberg, 206 East 44th street; Mrs. Sherman Leach, 916 Oakwood boulevard; Mrs. Iverson C. Wells, 4435 Clifton avenue; Mrs. W. A. Walsh, 4621 Sheridan road; Mrs. M. Brandenburg, 6856 South Park avenue; Miss Olive M. Platt, 2116 North Halsted street; Miss Clara R. Lacey, Downers Grove, Ill.; Mrs. Charles Schleyer, 6919 South Elizabeth street; Mrs. N. J. Rauen, 1522 North Oakley avenue; Mrs. J. E. Mohlin, 5434 Evanston avenue; Mrs. E. P. Nelson, 1427 Farragut avenue; Mrs. Charles Bonner, 5752 Rosalie court; Mrs. Harry C. Podolsky, 5701 Indiana avenue; Mrs. R. L. Sickel, 2755 North Sacramento avenue; Mrs. A. W. Ruehle, 3849 Vincennes avenue; Mrs. J. William Rae, 5869 Southport avenue; Mrs. William Legnard, Rogers Park, Forest Hotel; Miss E. M. Westpfall, 5047 Strong street; Mrs. V. S. Curtis, Grant Park, Ill.; Mrs. W. C. Campbell, 7056 Eggles-ton avenue; Mrs. William P. Varney, Wilmette, Ill.; Mrs. C. L. Schutt, 4730 Kenmore avenue; Miss Ella M. Salmonson, 6732 Newgard avenue; Miss Billie G. Cockrell, Wilmette, Ill.; Mrs. C. B. VerNooy, 1371 East 50th street; Mrs. W. A. Simons, 1932 Warner avenue; Mrs. G. F. Perkins, 431 Ninth street, Wilmette, Ill.; Mrs. Thomas A. Bichl, 1843 Addison street; Mrs. W. R. Allison, 4756 Kenwood avenue; Mrs. Edwin Heitbrink, 3624 North Hoyne avenue; Mrs. Carl Nettelhorst, Park Ridge, Ill.; Mrs. G. B. Randall, 5101 Kenmore avenue; Mrs. William G. Bohnsack, 3645 Perry street; Mrs. Frank B. Lambert, 1535 Addison avenue; Mrs. Oscar Peterson, 513 Elm street, Blue Island, Ill.; Mrs. H. G. Bowstead, Glen Ellyn, Ill.; Miss Esther Anderson, 4072 Kenmore avenue; Mrs. A. F. Hottinger, 1108 Oakdale avenue; Mrs. T. C. Moulding, Wilmette, Ill.; Mrs. J. W. Moulding, 5453 Lakewood avenue; Mrs. R. M. Combs, 5318 Jefferson avenue; Mrs. F. H. Lazenby, 902 Alexander place; Mrs. D. A. Buchanan, 5313 Calumet avenue; Mrs. A. W. Sommers, 6204 Washington avenue; Mrs. E. E. Fletcher, 6130 Champlain

SOME OF THE CHICAGO GLAD HAND COMMITTEE



G. Hottinger, on Entertainment Com.



C. B. VerNooy, Treas. Chi. Clay Club.



Wm. Schlake, Pres. Chicago Clay Club.

avenue; Mrs. J. B. Tower, 944 Laurel avenue; Mrs. E. P. Stevens, 2338 Fairfax avenue; Mrs. M. N. Kimbell, Park Ridge, Ill.; Mrs. H. O. Binyon, 2535 Kimball avenue; Mrs. W. K. Millard, 3829 North 43rd avenue; Mrs. E. C. Kimbell, 2415 Smalley court.

The headquarters of the Chicago Clay Club will be room No. 1136. Members of the reception and entertainment committee will be in evidence there at all hours, and the visiting clayworkers are invited to use the quarters at all times, and parties will be on hand to furnish information about the conventions, the show or the city.

The Clay Club is composed of Chicagoans connected with or interested in the clay product industry and was organized for the purpose of making sure that out-of-town visitors to Show and Conventions have an enjoyable time. William Schlake is the president; B. F. Weber, first vice-president; H. L. Matz, second vice-president; E. C. Kimbell, secretary; C. B. VerNooy, treasurer.

The various committees which will look after the details of the receiving and entertainment of the visitors follow:

Executive—William Schlake, president; B. F. Weber, first vice-president; H. L. Matz, second vice-president; E. C. Kimbell, secretary; C. B. VerNooy, treasurer.

Finance—William Schlake, chairman; H. J. Flood, S. T. Jacobs, Joseph Hock, T. C. Moulding.

Entertainment—L. D. Binyon, chairman; C. L. Rorick, C. H. Alsip, W. P. Varney, E. K. Cormack, Adolph Hottinger.

General Reception—Allis Brick Company: Charles Schleyer, N. J. Rauen, J. E. Mohlin, E. P. Nelson.

American Terra Cotta & Ceramic Company: William D. Gates, N. H. Gates, John G. Crowe.

Bach Brick Company: Otto C. Bach, Fred A. Bach, Julius Bach.

Bonner & Marshall Company: Charles Bonner, Harry C. Podolsky, Charles A. Bonner, R. L. Sickie, A. W. Ruehle, J. Will Rae, William Legnard, L. Lewis Cohon, Benjamin W. May, Roy Kearns, A. B. Kelly.

The Bucyrus Company: Carl Horix, L. P. Russell, B. F. Johnston.

Builders' Brick Company: Frank C. Layer.

Calumet Brick Company: C. H. Alsip, F. W. Alsip, Charles Haaker.

Carey Brick Company: Thomas Carey, W. A. Sullivan, John D. Shelhamer.

George B. Carpenter & Company: Mark Kaplan.

Chambers Bros. Co.: Elmer G. Biechler.

Chicago Brick Company: S. T. Jacobs.

Chicago Brick Machinery Company: John J. Moroney, G. E. Luce.

Chisholm Boyd & White Company: H. J. Flood, L. W. Flood.

Curtis Brick Company: E. C. Curtis, V. S. Curtis, E. B. Griffin, R. R. McCormick, F. H. Kiest, A. J. Haaker, O. C. Haaker, Chas. Bohlmann, W. C. Campbell.

Gustav J. Heimann: Gustav J. Heimann.

Hydraulic Press Brick Company: Wm. P. Varney, A. H. Robinson, C. L. Schutt, F. A. Schutte, T. R. Heaphy, E. R. Andrews, B. T. Wheeler, A. Martin, A. J. Dunn, C. A. Dunn, A. S. Fielding, C. A. Anderson.

Illinois Brick Company: William Schlake, C. B. VerNooy, Wm. G. Bohnsack, W. A. Simons, G. F. Perkins, S. B. Leach, W. F. Schlake, Thos. A. Bichl, W. R. Allison, Edwin Heitbrink, Carl Nettelhorst, James Ross, G. B. Randall, Wm. E. Miller, Frank B. Lambert, Theo. Schlake, Oscar Peterson, L. F. Schwartz, G. L. Peterson, G. F. Munroe.

Illinois Terra Cotta Lumber Company: A. W. Beidler, Jenkins & Reynolds Company: F. G. White, C. G. Hicks, W. J. Guy, W. T. Parke, R. B. Howard, Charles Foley, Richard Stevens.

Kenfield-Leach Company: F. S. Kenfield, Iverson C. Wells, C. L. Rorick.

S. S. Kimbell Brick Company: L. D. Binyon, James A. Hogan, H. L. Matz, M. N. Kimbell, H. O. Binyon, C. J. Hill, W. K. Millard, E. C. Kimbell.

THREE MEMBERS OF THE CHICAGO CLAY CLUB



E. C. Kimbell, Sec. Chicago Clay Club.



W. P. Varney, on Entertainment Com.



E. Cormack, on Entertainment Com.

Lake View Brick Company: Daniel Blaul, Walter B. Lutter, Fred Blaul.

Lutter Brick Company: Henry J. Lutter, A. C. Lutter, Henry W. Lutter.

Meacham & Wright Brick Company: F. D. Meacham, S. P. Blount, J. D. Blount, H. G. Bowstead, J. J. Lyons, J. Drnek, E. I. Cruise, A. Waldron, G. S. Bowstead, M. McHugh.

Stephens-Adamson Mfg. Company: Colby M. Avery, L. V. Lindquist.

Thomas Moulding Brick Company: T. C. Moulding, J. W. Moulding, R. M. Combs, F. H. Lazenby, D. A. Buchanan, A. W. Sommers, W. W. Inches, G. O. Watson, E. E. Fletcher, O. J. Blattner, W. L. Rose, M. K. Davidson, J. B. Tower, E. P. Stevens.

National Brick Company: Henry Busse, B. F. Weber.

Northwestern Terra Cotta Company: Fritz Wagner, A. F. Hottinger.

Williams Patent Crusher & Pulverizer Company: M. J. Williams, R. E. Winter.

Wisconsin Lime & Cement Company: Joseph Hock, Edw. K. Cormack, Adolph Boeffler, Charles Woodward, H. S. Balhatchet, J. J. Rochford, P. A. MacFarlane, C. F. Dynes, H. B. Holmes, J. P. Sullivan, M. B. Hinton, W. J. Lance, G. W. Swiney, R. J. Eitel.

TEXAS BRICKLAYERS MAKE DEMANDS.

Give Contractors Until March 1 to Agree to Pay \$7 a Day for Laborers and \$8 for Foremen.

(By a Special Correspondent.)

AUSTIN, Texas, Feb. 14.—Contractors in Texas who employ union labor on brick and stone construction work must make answer on March 1 to the official notice and demands of the state organization of union stone masons and bricklayers, proposing an increase of wages of foremen on work of this character from \$7 to \$8 per day and of the laborers from \$6 to \$7 per day. What is the most remarkable feature of the demands contained in this notice, however, and which is creating widespread comment on the part of contractors and the people of Texas generally are the

further demands that contractors shall provide individual drinking cups and private dressing rooms for the union men employed upon such work.

It is the opinion of contractors generally that if these demands are acceded to it will mean a great falling off in brick and stone construction. It is claimed that already the high wages which must be paid for labor of this class, together with other burdensome restrictions and requirements relating to their employment, have had the effect in recent years of greatly increasing the cost of stone and brick building. As a result of this increase in cost, builders are liable to decrease their consideration of stone and brick in their specifications for new structures.

The excessive wages which must be paid laborers and the other things that are demanded by the unions of the contractors are having a direct effect upon the brickmaking and stone quarrying industries, it is claimed. Instead of there being a great increase in the output of these materials, as the general building activity of the state would warrant, there is comparatively little expansion of the industries going on.

One contractor remarked, when he received the notice of the demands as to an increase of wages and the providing of individual drinking cups and private dressing rooms that the opulence which the stone masons and bricklayers are already enjoying have about caused him to give up his business and become a working member of the union. He said many contractors in Texas would be glad to work for \$8 a day under such conditions as are proposed.

What answer the contractors will give these new demands is not yet known. It is understood that each contractor will be left to answer the demands for himself. It is not thought many of them will be willing to accede to the provisions.

One of the present rules of the union is that when a foreman or laborer quits a job, if it is as early as 2 o'clock in the afternoon, he shall be paid for the full day and that the money due him must be handed over on the spot, and if the contractor is not prepared to do this, the man shall be allowed full time while the money is being secured from the bank or elsewhere. This is said to be only one of several other burdensome requirements of the union.

DELUGE FORD WITH MAIL TO BOOST BRICK

Clay Manufacturers Respond to Appeal Sent Out by Brick and Clay Record in Attempt to Aid Washington Association



FOR the first time in the history of the industry the clay product manufacturers of the United States got together as an active unit within the last few days and gave substantial and convincing proof of the possibilities of concerted work.

Seven thousand readers of "Brick and Clay Record" deluged the Ford Motor Company of Detroit, Mich., with letters and telegrams urging that concern to reconsider its decision to use concrete to the exclusion of brick in the construction of the proposed new factory building at Seattle, Wash.

This campaign was conducted as a result of an appeal to "Brick and Clay Record" for help by the Washington Clayworkers' Association, with headquarters at Seattle. The appeal came in the form of a telegram, and prompt action was urged.

Within an hour after the message was received in this office telegrams had been dispatched to the various national, state and city organizations, briefly outlining the nature of the appeal and urging that every effort be exercised toward persuading the Ford company to use burned clay products.

In the meantime a four-page circular letter, showing a reproduction of the telegram from the Washington association was being printed. This circular also contained an appeal to the clayworkers of the nation to write a personal letter to the Ford Company, laying before it the importance of using clay products and emphasizing the mistake it would make in specifying concrete for wall construction.

Before night these circulars were mailed to each of the 7,000 readers of "Brick and Clay Record," and one of the most aggressive campaigns ever conducted by a united industry was on.

While the thousands of letters that the Ford company received from the clayworkers of the country did not cause it to change its plans for the Seattle factory, it did prove:

THAT clay manufacturers **CAN** get together if they **WANT** to.

THAT the way to **DO** a thing is to **DO** it.

THAT the time to win people to brick is not after they have made plans to build, but **BEFORE** they decide to build.

THAT never was the necessity for some sort of an association or organization of national scope, to which appeals of this nature can be addressed, better shown than in this instance.

The campaign further revealed the fact that the Washington Clayworkers' Association was unnecessarily alarmed, as brick really will enter largely into the con-

struction of the new Seattle Ford factory, this assurance being given by the Ford company in a letter to "Brick and Clay Record" and to readers of this journal who had written the company.

The outside walls of the structure are to be of concrete, but inasmuch as the plans call for practically an all-window construction, the quantity of this material used will be comparatively small.

Fancy brick are to face this concrete, and burned clay will enter into the construction of the partitions, so, after all, clay is not being ignored.

The following letter from the Ford company was received by this journal a few days after the campaign was started, and in justice to the company it is printed in full:

Our attention has just been called to an incorrect report contained in a bulletin issued by you and sent broadcast among the manufacturers of brick and clay products.

We find that our assumption, gained from the number of communications received, is correct, and the persons in whose hands these circulars have fallen have been grossly misinformed on the part of some one who was not entirely familiar with the plan of our proposed building. This will as far as possible be designed after our factory in Detroit, which has been acknowledged by engineers to be the most up-to-date and modern in construction, and consists of brick wherever their use is considered practical by our engineers.

Even some of the communications received in response to your request contained in the bulletin mentioned the fact that their buildings were designed by architects after our Detroit plant.

In view of the above we trust that you will take the necessary steps to correct the misapprehension that has been gained by those representing the brick industry through the circularization of this misinforming report. We await your early reply.

Another letter than came a day or so later was from W. T. Houlahan, president of the Washington Clayworkers' Association, and gives further proof of the unnecessary alarm the Ford case occasioned among some of the members of the clay-manufacturing fraternity out on the Pacific Coast. It develops from Mr. Houlahan's letter that the original message sent this journal, although signed with the title of the Washington association, was, after all, sent by some one not even a member of that body. Mr. Houlahan, however, gives approval of the action and commends the writer for his enterprise. In view of these facts, President Houlahan's letter will prove rather interesting reading, and it is herewith printed in full, believing it will make some points clear.

We received your telegrams and should have acknowledged same, but were at sea until one of our members chased the matter down.

We do not wish to hinder in any way any one who wishes to boost clay products and will do all we can—that is, the few of us who are left—to assist any one

THIS IS THE TELEGRAM "THAT STARTED SOMETHING."

Seattle, Wash.,

Jan. 24, 1913.

"Brick and Clay Record,"

Chicago, Ill.

John Graham of Seattle, architect for Ford Motor Co.'s new factory here in Seattle, is now in Detroit for conference with heads of the Ford Company. We understand he is advising use of concrete, whilst brick was originally to be used. This plant would use two million common brick, costing less than eight dollars delivered. In line with your laudable campaign for extension of field for clay products, can you do anything to get brick used? Immediate action to knock out concrete is imperative.

Washington Clay Workers' Association.

DAYTON ROTARY CLUB VISITS RAYMOND PLANT



The above view shows the members of the Dayton Rotary Club, in front of the office of the C. W. Raymond Co., where they were the guests of that company, Friday, Jan. 31. They were taken to the plant on the trolley, special cars being provided by the Raymond Co. After viewing the extensive workings of the plant, a splendid lunch was served by the company. The guests, prominent citizens of Dayton, expressed much surprise at the magnitude of the industry, and were much interested in the demonstrations of modern methods of clay manufacture.

who strives for the cause, whether a member of the organization or not, and we are very sorry to inform you that the gentleman who had ginger enough left in him to wake up and try is not a member of our organization, nor never was. We speak of Mr. Montague Bond, manager of the Lake Union Brick Company. Mr. Cecil Ridge, former manager of this company, who was our secretary, left his correspondence with the Lake Union Brick Company, so the present manager naturally thought the secretaryship of our association was included with his duties of manager.

There is one good thing about this, it started something, although all of our people have failed previously in their efforts to do anything with John Graham. Our organization is practically dead, and there are little, if any, prospects of it being revived. We might add that the site of the Ford Motor Company is about two blocks from the Lake Union Brick Company's plant.

Mr. Houlahan also enclosed a copy of a letter he wrote the Ford company urging it to reconsider using clay products.

It is to be hoped that the entire lesson which the Ford case teaches the clayworkers of the world will not be overlooked by the clay manufacturers of the state of Washington, one of whom is responsible for the aggressive fight put up for clay.

The telegram which was received by this journal, and which started the ball rolling, was received Jan. 24 and, in full, is as follows:

John Graham of Seattle, architect for the Ford Motor Company's new factory here in Seattle, is now in Detroit for a conference with the heads of the Ford company. We understand he is advising the use of concrete, while brick was originally to be used. This plant would

use two million common brick, costing less than eight dollars delivered. In line with your laudable campaign for extension of the field for clay products, can you do anything to get brick used? Immediate action to knock out concrete is imperative.

(Signed) Washington Clayworkers' Association.

Immediately upon receipt of this message "Brick and Clay Record" sent this reply by telegraph:

Will do all we can for you, but information at hand very meager. Ford Detroit factories are concrete. You show Graham Government report on Frisco fire by Major John Stevens Sewall and booklet on clay products in Frisco fire. Denny-Renton Company should be able to help you. We are wiring Graham and Detroit brick makers.

Following this telegram to the Washington state association was this one to John Graham, the architect of the Ford company, who was supposed to be favoring concrete:

Are you willing to be shown that brick is better for your Seattle factory than concrete? We have the goods—have you the time and inclination? Wire answer our expense.

Mr. Graham was in Detroit at the time and telegraphed that he was coming to Chicago on first train to hear what arguments could be given him. Mr. Graham reached Chicago Jan. 29 and was met by members of the Chicago Face Brick Association and representatives of this journal. His explanation of the plans proposed for the Seattle factory put a different light on the situation. He explained that neither himself nor the Ford company were partial to concrete, and that it was their intention to use

clay products wherever they were considered by engineering experts to be the best.

Prior to Mr. Graham's visit, however, the following telegram had been dispatched to Secretary Randall of the National Brick Manufacturers' Association, Secretary Fiske of the Building Brick Association of America, Secretary Adams of the American Face Brick Association, Secretary Queisser of the Ohio Face Brick Association and Secretary Ellery of the Brick Builders' Bureau of San Francisco:

We have just received a telegram from Washington Clayworkers' Association, Seattle, and we ask your quick co-operation in effort to score another victory for burned clay. We are sending a bulletin to every clay product manufacturer in America urging their co-operation, for Ford will build similar factories in other cities. Their telegram in full is as follows: John Graham of Seattle, architect for Ford Motor Car new factory here in Seattle, is now in Detroit for conference with the heads of Ford company. We understand he is advising use of concrete, while brick was originally to be used. This plant would use two million common brick, costing less than eight dollars delivered. In line with your laudable campaign for extension of field for clay products, can you do anything to get brick used. Immediate attention to knock out concrete is imperative.

The above telegram also was sent to a number of the large face brick manufacturers, particularly those located either in Detroit or Seattle.

With the telegrams and the circulars that were mailed to the readers of this journal it was not long before there was evidence that the campaign was being pushed vigorously all over the country. Every mail brought letters from manufacturers, who wrote to say they had responded to the appeal made and promptly wrote the Ford company as requested. One of the first letters that came to this office was this one from the Alton Brick Company of St. Louis, Mo.:

Say, you are a live one!

You're not afraid to back your judgment with your money. In this you are certainly setting a good example for the brick manufacturers of this country.

I am enclosing copy of letter I have addressed to Mr. Ford today.

Wishing you the success which you so richly merit, I am

The letter to Mr. Ford referred to above follows:

You will make a mistake if you substitute concrete construction for brick in the building you are about to erect at Seattle, Wash.

Good concrete construction will cost you as much as brick and will not give you as good or attractive a building.

We believe, if you will take the trouble to investigate this matter, you will find that our statements are true.

We rejoice in the great success you have made of your business and trust that you will achieve yet greater things.

Hundreds of copies of letters sent the Ford people have been received by "Brick and Clay Record," and it is to be regretted that there is not space enough to give each one in full, as the arguments used by some of the writers were most convincing and would be of value to any clayworker.

The Detroit brickmakers were alive to the situation, as the following letters will prove, the first one being from the George H. Clippert & Bro. Brick Company, while the other is from the Puritan Brick Company:

With further reference to long-distance conversation of Jan. 25, between your office and the undersigned, would say that upon investigation I find that Mr. Graham is an architect of Seattle, Wash., who submitted plans, etc., to the Ford Motor Company's engineers, who have approved same and instructed him to proceed with the work.

These plans and specifications call for reinforced concrete construction, which will be identical with their main plant here, a construction on which they insist.

No doubt a large amount of brick will be used for partition walls, etc., as was done at their local plant.

Trusting that this information may be of service, I am,

Yours very truly,

Geo. H. Clippert.

We received your telegram of January 27th relative to the Ford Company's factory at Seattle, Wash.

The writer made a trip to the Ford company's offices and took this matter up. It is doubtful if any influence can be brought to bear to change the plans of the Ford company as generally laid down covering the construction of their factories. In fact, we are personally of the opinion that the factories which they are building meet their requirements better than any other construction could. They will undoubtedly use some brick in their factory, but it will not be common brick.

Their plan of building is to use a reinforced concrete frame and floors, with metal sash windows which extend solid from upright to upright. This gives them a maximum of light.

Their plan has always been, and we expect it will be in this case, to use facing brick as trimming and in a decorative way in conjunction with the concrete. We believe, also, you will find that they will face the concrete very largely with facing brick.

Trusting this information will be of service to the Washington Clayworkers' Association, and assuring you of our pleasure in being able to co-operate in a small way, we are,

Yours very truly,

The Puritan Brick Company.

From out of the hundreds of letters received we cannot refrain from picking the following, which was received among the first of the campaign from the Fraser Brick Company of Dallas, Texas:

Immediately upon receipt of your appeal of the 27th we wrote a letter to Mr. Henry Ford and hope that this is the only one of 7,000 or more he will receive this week in response to your suggestion.

We wish to express our appreciation of your interest, and we congratulate the Seattle folks on their enterprise in getting in touch, through you, with the entire clay-working industry.

The campaign is closed, and while it did not convince the Ford company that it ought to build a solid brick factory, it did something else that was of more value to the clay industry, and that is it proved co-operative effort is just what is needed to stir up business. If there was some sort of organized effort sending out daily just such messages as were given Mr. Ford, not to just ONE factory builder, but to EVERY man in the country that EXPECTS to build, there would be truly an era of burned clay.

SHORT COURSE IN CERAMICS PROVES VALUABLE



FOR several years universities have been offering short courses to the practical farmer and to men in a few other lines of industries, but this year is the first time a course of this kind has been offered to the clayworker. The University of Illinois, with the aid of its instructors in the ceramics de-

partment, together with the use of its chemical laboratories and kilns has just given such a course during the two weeks of January 13th to 25th. The undertaking was under the personal direction and instruction of Prof. A. V. Bleining-er of the Bureau of Standards, Pittsburgh. All instructions and laboratory work were given free of charge. There were

no requirements made as to previous training, any one in the clay industry being eligible to take the course. The object of the course was to give in an elementary and practical manner the scientific principles of clay working.

In a general way the course covered the entire field of clayworking, from the time the clay was dug until it was burned, and ready for the cars. Some of the subjects of the lectures were as follows:

"Classification of Clays;" "Winning and Preparation of Clays;" "Shaping of Clays;" "Properties and Testing of Clays;" "Chemistry;" "Physics;" "Drying;" "Burning;" "Kiln and Kiln Construction;" "Stacks and Drafts;" "Slips and Glazes," etc.

Besides the lectures, experimental work was given in the laboratory, including porosity tests of clay at different tem-

serve for reference in outline form the main principles of clay working, upon which, as a foundation, future experiments and studies might be based. After attending the course, it was the general opinion that every member felt enabled to go ahead with a clearer idea of the whys and wherefores of things.

The well-equipped ceramic laboratory of the University of Illinois, with its three new test kilns, was an ideal place for the work. But the success of the undertaking was largely due to Prof. A. V. Bleininger's knowledge of ceramics and his ability to impart this knowledge to others. A student, telling of Prof. Bleininger's work, said: "In the period of one hour he would tell us all anybody ever knew about chemistry, make a few experiments illustrating his ideas, tell some member of the class where he



Students and teachers who took part in the first short course in ceramics at the University of Illinois. Reading from left to right, beginning with the back row, the names are as follows: Alfred Hammerschmidt, Lombard, Ill.; Dan Morey, Jr., Ottumwa, Ia.; Mr. Wood, Fritz Wagner, Jr., Chicago, Ill.; F. M. Snyder, Buffville, Kans.; H. P. Robbins, Roodhouse, Ill.; A. H. Farrens, Hastings, Nebr.; C. T. Ward, Tonica, Ill.; O. C. Kennedy, Raleigh, N. C.; W. M. Pratt, Earlville, Ill. Second Row: B. C. Baidridge, Illiopclis, Ill.; R. C. Smith, St. Elmo, Ill.; C. H. Henderson, Alton, Ill.; R. Y. Wright, Minter City, Miss.; A. F. Kleymeyer, West Point, Ky.; R. E. Griffith, Chicago, Ill.; Henry W. Lutter, Glen View, Ill. First Row: H. C. Steinmayer, La Salle, Ill.; R. B. Keplinger, Canton, O.; R. K. Hursh, Instructor; Prof. R. T. Stull, Prof. A. V. Bleininger, Geo. E. Bowen, Strasburg, O.; C. C. Murray, Reynoldsville, Pa.; F. E. McIntire, Equality, Ill.

peratures, shrinkage tests, preparation of glazes, etc. There were also kiln firings with the accompanying draft readings, gas analyses, pyrometer readings, and the use of cones.

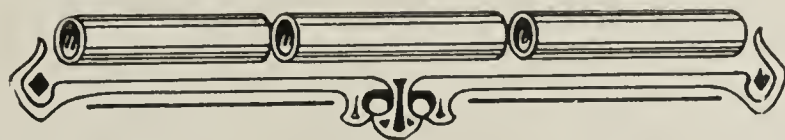
To cover this field in two weeks of course meant "hitting the high spots" only, and might seem to some to be entirely too superficial. But this was not the case. The course was so well directed and the main points so clearly made that every one was greatly benefited. The lectures were very informal, allowing free questioning and discussions by the members of the class. Between lectures, individual problems were taken up with the instructor and gone into in detail. The experiments and kiln firings were so arranged as to bring out in a practical way the subjects discussed in the lectures, thus impressing them more forcibly on the mind. The lectures were such as to enable the students to take extensive notes which made them the most valuable part of the course, enabling the students to pre-

was wasting a lot of money, answer a dozen questions, either on or off the subject under discussion, and still have time left to squeeze in enough humor to make even the most pessimistic clay worker smile. His lectures certainly were most interesting and enlightening and every one present had only the greatest of praise for him. Prof. R. T. Stull, who is now the head of the ceramic department at the University, gave some very valuable points on glazing and other subjects. His many years of varied practical experience gave to his lectures the practical value desired by his listeners. There were other men who delivered lectures on other subjects of interest to clay workers. All these, together with the assistance we received from the regular ceramics students, made the course very beneficial and at the same time very pleasant."

The class in ceramics christened themselves "Brick

Bats," to distinguish the ceramic "bunch" from the "Short Horns," who were taking the short course in agriculture at the same time. The "Brick Bats" represented almost every branch of the clay industry, including brick, terra cotta, drain tile, sewer pipe, stone ware, fire brick, pottery. They were of all ages and came from the East, West, North and South. Although coming from distant parts, with varied interests, the students formed many congenial acquaintances during the long shifts in kiln firing, making the time pass all too quickly. The social features were not neglected, one evening being spent at

the theater, and one evening the Ceramic Club of the university gave a smoker in honor of the out-of-town "Brick Bats," which proved highly enjoyable. A quartet was developed which helped materially to make the trip to Danville pleasurable. While the course was strenuous, entailing much loss of sleep, those who were fortunate enough to be present feel that the time and effort was well spent and that their work in the future will be made easier and better for the experience and information gained at the "first short course in ceramics," which proved so successful.



BRICKLAYERS OFFER TO SHARE CLAY SHOW WORK COST



ALL the bricklaying done on the exhibits at the Clay Show this year will be under the direct supervision of the Bricklayers', Masons' and Plasterers' International Union of America, which organization has also agreed to bear twenty per cent of the cost of the work.

This arrangement was made within the last few days and followed the generous offer of the executive board of the Union to assist the management of the Exposition in every way possible.

There was considerable criticism last year by exhibit-

sion for this criticism and assurances were given that the Union would take direct charge of the work this year and prevent a recurrence of the same trouble. To this end, a competent superintendent from the head office of the International Union will supervise all the bricklaying and not only see that the work is properly done, but also that no over-time charges are made.

The Union at first proposed to pay for all the bricklaying work done at the Coliseum, not realizing what the offer really meant. However, when it was shown that a proposition like this would bankrupt the Union, President



The Coliseum, Chicago, Where the Greatest Showing of Clay Products Ever Seen Will Take Place February 26 to March 8, 1913.

ors at the Clay Show, who claimed that the bricklayers made excessive charges for the work done. In recent correspondence between President William Bowen of the Union, and Secretary F. L. Hopley of the Exposition Co., the bricklayers expressed regret that there was occa-

Bowen modified the offer, finally agreeing that his organization would bear twenty per cent of the cost—not a small item in itself. This proposition has been accepted by the Exposition management.

The generous offer of the International Union will lead

to a closer relationship between the two bodies—the bricklayers and the brickmakers. President Bowen and Secretary Dobson, in correspondence with Secretary Hopley of the Clay Show, made the first overture to this end, expressing a wish to see both of these two important interests in the clay industry have a better understanding of the problems and difficulties that confront each.

In view of the possibilities along this line the correspondence that passed between the officers of the Union and Secretary Hopley of the Exposition company, is very interesting. The first letter was written under date of Jan. 20, and came from Secretary Dobson. It follows:

In behalf of our International Union, we are getting up a photograph display of all the concrete collapses that we have reproduced in the columns of our monthly Journal for the last few years, with the idea of placing same on view at the coming exposition. These photographs will be placed together to make two large pictures, each one nicely framed and under each picture a short explanation of the collapse will appear. Will these two pictures be acceptable for exhibition?

Our Executive Board will also be pleased to do anything it possibly can to help to make the exposi-



Splendid Brick Building which Houses the American School of Correspondence at 58th St. and Drexel Av., Chicago.

tion a success. Have you any suggestions to offer as to the manner in which we can be of the most use?

Secretary Hopley lost no time in replying to this letter and, under date of Jan. 21, wrote as follows:

We are in receipt of your favor of the 20th and in reply have to say that we will be glad to set aside a space at our exposition for the use of the International Bricklayers Union, if you so desire, provided you will work in harmony with the local Chicago Union which we are quite sure you will do.

We have only the best of feeling towards the Bricklayers' Union. It is closely allied to the brick making industry, and we believe there should be the closest unity between the bricklayer and the brick manufacturer. We had it in mind to make a special feature in this exposition of a bricklaying contest offering prizes to the winners. On this we would like to have your opinion. There is no doubt in our mind but that the Clay Products Exposition will prove very beneficial to the bricklayer in that it stimulates a more general use of brick for construction purposes.

Anything we do to stimulate the use of brick stimulates the use of bricklayers. Therefore, the bricklayers of the country ought to be as much interested in making the Clay Show a success as the manufacturers themselves. Some of our exhibitors in the last exposition had very unkind feelings because of what they thought were excessive charges for bricklaying. This

has lost us a number of exhibitors in the present show, and we believe the Bricklayers' Union should make every effort to have the brick exhibits installed at the very minimum of cost, in order to assist us in getting the exhibitors into other expositions.

We do not think the exposition should be looked upon as an opportunity to get money from the exhibitors. It rather ought to be the policy of the bricklayers to show that it is an opportunity for them to assist the brick manufacturers in promoting the use of brick. We shall be very glad indeed to know if you can help us along this line, and also please let us know if you care to avail yourselves of the opportunity of the use of this space in the exposition.

This letter from Secretary Hopley was considered of sufficient importance by Secretary Dobson of the Union to warrant a special executive session of the board of directors. Following this meeting the following letter was written to the Exposition management:

We are in receipt of your communication of January 21st, and note what you have to say regarding the setting aside of space for our use at the Clay Products Exposition, which is to be held in your city commencing with February 26th.

Relative to the statement which you make, that "This space is set aside provided you will work in harmony with the Chicago local union," would say that there can be no question about this being done. The Chicago union is a subordinate union chartered by our International Union, and will work in harmony with us in whatever we may do to help make the Clay Products Exposition the success that it ought to be. As stated by you in your letter, the Bricklayers', Masons' and Plasterers' International Union of America is certainly closely akin to the brick-making industry, and we agree that there should be, not only unity of action, but also a perfect understanding in all those things that stand for the protection and promotion of the industry in general.

We note what you say regarding the unkind feelings that were engendered at the last Clay Show by the alleged excessive charges for bricklaying that was done thereat. This we very much regret, and we want to assure you that at the forthcoming exposition there will be no occasion for such a feeling to again arise. Yesterday, at a meeting of our Executive Board, all phases of your communication were discussed, and we decided that it is our duty to do something in a substantial way to assist the firms that will make the exhibits, and it was unanimously agreed to furnish, free of cost to exhibitors, all labor required in connection with the laying of bricks.

Some other matters were also taken up, but the above, as well as these other matters, will be taken up with you personally next week by our I. U. President, Mr. Wm. J. Bowen, who will visit Chicago for the purpose of a personal interview with you and the rest of the officers of the Clay Products Exposition and complete with you the details of our decision.

This letter, because of its assurances of a desire on the part of the Union to co-operate with the manufacturers and an acknowledgement of the necessity for unity in action that will tend to bring about "a perfect understanding in all those things that stand for the protection and promotion of the industry in general," is considered as a highly important one and augurs well for the future.

It will be noted that the Union officials want to prove their sincerity in a practical way. The offer to do all the bricklaying for the Clay Show without charge, rather startled Secretary Hopley as the item was one of considerable magnitude, it being estimated that \$20,000 was involved in the matter. Feeling that there was possibly some mistake, Secretary Hopley sent the following telegram:

Will you authorize our announcing to exhibitors information in your letter of the 24th, that you are going to furnish free of charge all brick laying in the Clay Products Exposition of 1913?

Secretary Dobson removed whatever doubt there was about the accuracy of the offer by confirming the earlier offer in the following telegram:

Yes, our Executive Board will be pleased to have you announce its decision.

The day following President Bowen of the Union, telegraphed that he was leaving for Chicago and would complete the necessary details for the work upon his arrival in the city. Mr. Bowen later discovered what his offer really meant and sent the following message:

Executive Board as outlined to you by President Bowen had no conception as to the immense cost of constructing exhibits in brick. We must, therefore,

reconsider our first proposition and in its place we offer to pay twenty per cent of cost of bricklayer work in 1913 exposition on estimate arrived at in my conversation with you, bricklayers to be furnished by us and work under our supervision. If this offer is accepted we guarantee to eliminate all extraordinary charges, such as extra pay, etc., and see that the work progresses in a proper manner.

Secretary Hopley replied to this letter, concurring in the second offer and again assuring Mr. Bowen of the Exposition management's satisfaction in the Union's liberality and broadminded spirit. President Bowen later came to Chicago and completed the details of the arrangements for doing the work at the Coliseum.

SOME OF CHICAGO'S FAMOUS FIREPROOF HOSTELRIES

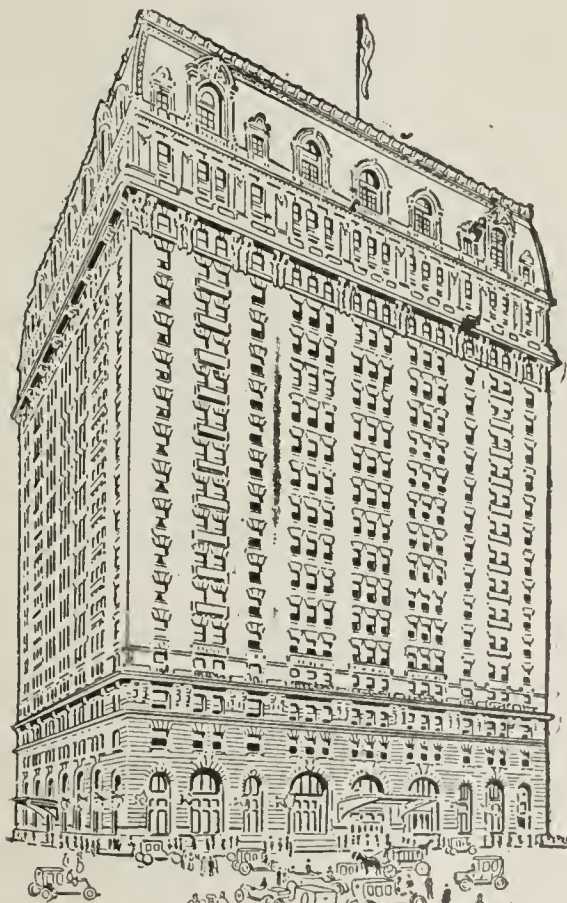


CHICAGO is famous, not only in America, but abroad for her numerous magnificent hotels, where travelers are assured of every luxury and convenience which man's fancy and ingenuity can contrive. In few cities are to be found so many hotels of the fireproof type, which contain so many evidences of the variety of artistic effects to be attained by the liberal use of burned clay products.

Since the early "fifties" the Sherman House, Chicago, Ill., has been marked for the solid, substantial type of its patrons—such men as Emerson, Lincoln, Douglas, Grant, Logan and other illustrious men were proud to make the Sherman House their home while in Chicago.



Hotel Sherman.



Hotel La Salle.



Auditorium Hotel.

for without clay products it would be almost impossible to erect such a building and make it fire-proof, safe and sanitary. Visiting clayworkers may well spare the time necessary to inspect this building and it will to most be a revelation as to the many and varied uses made of burned clay wares, for, from the lining of the walls to the dainty terra cotta ornamentation on the upper stories clay has been most lavishly used.

The Auditorium Hotel, Chicago, is well known to the traveling public as a hostelry where the comfort of guests is looked after conscientiously. Recent improvements added, costing more than \$300,000, places this hotel among the best and most up-to-date in the city. Situated on the corner of Michigan boulevard and Congress street, over-look-

The new Hotel Sherman, the fifth to occupy the site of the old Sherman House, is the last word in hotel building and is a model of up-to-date fireproof construction. Faced with brick with terra cotta trim, its interior finished elaborately with encaustic tiling, it may well be regarded as a monument to the clay industry.

The above view conveys only a faint idea of the magnificence which marks the wonderfully constructed and luxuriously equipped Hotel La Salle, one of the recent additions to Chicago's large list of modern hotels.

From the basement to the attic it represents all that is most modern in hotel construction and furnishing and the clay industry may well be proud of its part in its creation,

ing Grant Park and Lake Michigan, within easy walking distance of leading theaters and stores, and within five minutes' ride of the Coliseum, makes it a convenient stopping place for out-of-town people. In addition, it is a fireproof building, and its construction called for large quantities of clay products, including brick, fancy tiling and sanitary pottery.

Six additional kilns have been placed in the East Liverpool district over the operated capacity of 1912. This refers to the Taylor, Smith & Taylor Pottery Co., starting the Brunt Pottery, where white ware will be made to the exclusion of decorated ware. All decorated ware will be made at the T. S. & T. pottery in Chester, W. Va.

CREATING A LOCAL DEMAND BY PUBLICITY

Several Manufacturers Inaugurate Campaigns to Stir Up Interest in Their Product.
Comment and Criticism—Reproduction of Some Recent Advertising

This department, inaugurated in the Feb. 1 issue of "Brick and Clay Record," is conducted for the purpose of giving helpful hints to the clay manufacturer in his effort to create a local demand and combat the encroachment of the common enemies—concrete and lumber, in his market. The readers of this publication are invited to use the department freely for an exchange of ideas.

By A STAFF WRITER



THAT there is an awakening interest in local publicity work is shown by the action taken by the Wisconsin Clay Manufacturers' Association at Milwaukee, Wis., Jan. 29-31, when that body went on record as a state organization favoring concerted action among its members and urging all clay manufacturers to begin a vigorous campaign at once. This action followed the annual address of President Ringle, who devoted his entire speech to the advocacy of local advertising as a means of creating a local demand. This paper is printed in full in the report of the convention on another page and is well worth reading.

The hope of the clay worker lies in just such work as was outlined by Mr. Ringle and the sooner the movement is given a nation-wide launching, the quicker will burned clay come into its own.

There are a number of clay plants in various sections of the country that are doing a most excellent work along this line and those of Dallas, Texas, which have formed a local association and which have gone about the matter in a systematic and business-like manner, furnish a good example for others to follow. The Dallas plants use their local papers liberally and submerge their individuality by signing all their ads with the association name. The sole purpose of these ads is to stir up an interest in clay products and this is being done in a most gratifying manner. The excellent results speak for themselves.

A recent letter from the Fraser Brick Company, which is a member of the Dallas organization, says that a few days ago the association held a meeting for the purpose of checking up on the campaign for the past two or three months. The members were very enthusiastic over the work and decided not only to continue the publicity work, but to carry it on on a greater scale. To this end plans were made which will be put into effect at once.

The Consolidated Electric & Manufacturing Co., of Assumption, Ill., is one of the most recent recruits to the local publicity movement. One of their ads printed in a local semi-weekly paper is reproduced on this page. The type display might have been improved somewhat, but that is the fault of the printer. Here is what the Con-

solidated Company writes, which seems to give added emphasis to the value of local publicity work:

"An improvement of almost 100 per cent is revealed in our business of 1912 as compared to that of 1911. The products for 1912 were common brick and drain tile, but for the coming year, face brick and hollow blocks will be made also. The plant's capacity will be increased one-third and an order has been placed with H. Brewer & Co. for the new equipment. One new kiln will be built as soon as the weather will permit and at present we are remodeling the dry plant and equipping in with steam heat. The prospects for business during 1913 are very favorable, having orders now for practically one-half of our output for the year. E. F. Telling will be retained as superintendent."

Looks encouraging, doesn't it? Any clay plant owner that can show an improvement of 100 per cent in his business doesn't need to be told that progressive salesmanship pays. He knows it.

The Indiana Brick Club, with headquarters at Indianapolis, is doing some very effective advertising for brick construction in

the newspapers of that commonwealth, and excellent results are being accomplished. Here is a sample of one of the advertisements that appeared recently:

**BURNING DOWN A HOME EVERY DAY
IN THE YEAR.**

To say that Indianapolis burns a \$3,000 home every day in the year may bring the appalling fire loss closer to you. That is practically what the past year's waste from fires amounted to in Sioux City, Iowa. The total was one million dollars.

Here is another way to look at it: Four thousand dollars will build and furnish a comfortable house. Imagine a street more than a mile in length, lined on both sides with \$4,000 homes, each occupying a 50-foot lot, and wipe them all out with fire. In substance that is what Indianapolis did in 1912.

Unless your home is built of brick what assurance have you that it will not be one of those to be destroyed by fire during the present year? Why take the chance? Reduced insurance rates, reduced fuel bills and elimination of painting and maintenance make fireproof brick construction cheaper than combustible wood construction. Investigate and insure yourself against loss by building of brick. What's built of brick can't burn.

Brick go through fire before they go to you

They are made from clay and the clay is burned in a heat that averages 3,000 degrees Fahrenheit— a heat far greater than any fire they will ever be called upon to pass through in the walls of your house.

The heat makes brick fire-proof.
That is what makes brick fire-proof.
That is what makes brick imperishable.

Build your home of brick—It's economy

True economy not only takes in the first cost, but the cost that is to come.

Brick houses of average construction cost but a few dollars more than lumber or block—say \$150 on a \$3,500 house.

But when they are erected cost stops.

There are no repairs to be figured on.

There is no painting to be counted in every 3 or 4 years.

There is no depreciation in price—consequently your house will sell for what it cost you plus the increase in the value of your lot in the meanwhile.

There is a reduction in the insured rate of 37 1/2 per cent over concrete or stucco and more than 50 percent over lumber.

There is a reduction in fuel bills, because brick keep out the frost of winter.

There is comfort in the summer because brick keep out the heat.

And, above all, you can borrow more money from your bank on a brick house ten years after it is constructed than you can on a further or expensive house of the same value in the same period of time.

When you build build for true economy.

CONSOLIDATED ELECTRIC AND MANUFACTURING CO.
We have for sale all kinds of Face and Common Bricks

Compliments BRICK AND CLAY RECORD, Chicago

You don't have to paint brick houses

They have the natural color of nature—placed there by Nature and turned to clay there by Man.

Wood houses require painting every two or three years or they become unsightly and an early prey to the elements.

Concrete or stucco houses have to be recast every ten years or they chipped in cracked surfaces prove an expense to every generation.

You don't have to repair brick houses

Because they are imperishable—because they are impervious to insects, moisture, frost, and fire—they are some of the best things that have ever been made.

Brick has stood the test of 3,000 years.

The modern brick is better—more uniform—stronger and more sanitary than the brick of thirty centuries ago.

You don't have to insure brick houses

Because they are fire-proof and the insurance companies recognize that fact by giving a low rate.

Brick houses cost less to insure by 25 per cent than concrete houses.

Brick houses cost less by fifty per cent than wood houses of equal value.

Where all burned clay is used in brick construction—the walls, in the roof and in the floor, you don't have to insure your house. You do that when you build of burned clay.

You don't have to worry about brick houses

Because the time for worry was left behind when you built.

Build of brick and have a comfortable home—again in the winter—just in the summer—both and thriving in the year—depending on your price and security—giving you the right to your money.

The Champaign Clay Products Association
Champaign, Ill.

INSTRUCTIONS TO PRINTERS: Set double column, six lines deep, the material in a border. Set display in Champaign lower case. When the ad appears in your paper, send a copy containing the name of BRICK AND CLAY RECORD, Chicago.

Mr. Homebuilder:

Don't make the same mistake that these poor fellows made.

This is what they tell us every day:

"I wish I had built my house of BRICK."

"If I ever get a chance to build another home, it will be BRICK."

"Had I known what I know now, I would have built my home of BRICK."

You still have time to profit by their experience.

Ask for our free booklets and get posted.

BUILD WITH BRICK

STANDARD BRICK

MFG. CO.

Two or three ads from various sections of the country are reproduced on this page just to show what is being done in local publicity work. It is significant that the plants in these sections are not complaining about lack of business.

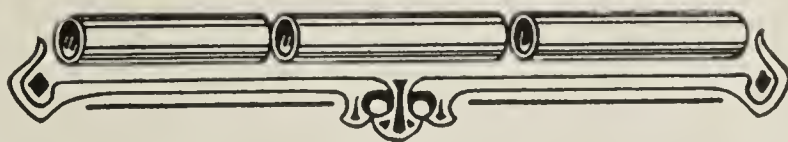
In preparing your advertising copy for the newspaper, do not overlook the fact that advertising is supposed to give the reader INFORMATION about something in which he is or should be interested. In other words, don't make the mistake of not saying enough, at the same time being careful not to say too much.

If you are trying to create an interest in building brick, so word your advertising that you will give some convincing argument why brick should be used to the exclusion of all other material. It is well to group these various arguments under separate headings and then prepare your ads in series, touching upon one phase in each ad. In other words, take for instance the well known fireproofness of brick. Make it a point to tell WHY brick are fireproof and then the advantage of using such a material as that in the construction of the home. In

the next ad take up some other strong argument and treat it in the same exhaustive manner, and continue in this way until you have gone through the entire list of "regular" arguments. This done, it is time then to take up separately, the proposition of architecture, of insurance, and of low cost of maintenance. These subjects and many others that may be suggested will afford you many a good selling talk through your newspaper, and will enable you to furnish a new ad every time the paper is printed. In this way some new phase of the subject may be presented daily.

As a means of clinching your arguments procure photographs of recently constructed residences made from your brick by prominent local people and run these occasionally in your ad with the proper reference to the same underneath the cut.

Above all, do not expect that your first ad is going to sell you 100,000 brick. Your advertising will be of an educational character and you cannot hope to get direct results at once—the effect must be cumulative. Keep hammering away and you will find that soon your appeals to reason will fall on fertile soil.



WISCONSIN DECIDES ON LOCAL ADVERTISING CAMPAIGN

By A STAFF WRITER



UBLICITY, more and better publicity, was the keynote of President John Ringle's annual address before the Thirteenth Annual Convention of the Wisconsin Clay Manufacturers' Association at Milwaukee, Jan. 29-31. As a result of this appeal to the members of the organization, resolutions were adopted, placing it on record as favoring the movement for local newspaper advertising as a means of creating a demand for clay products.

The establishment of bricklaying courses in the state industrial continuation school system of the various towns and cities, also was urged and steps taken to see that a course was included in every city in the state.

The preparation of a State exhibit for the Second Annual Clay Show to be held in Chicago the latter part of this month was another important subject discussed, and the Association shouldered the responsibility of guaranteeing the same. As a result of this decision, Wisconsin will have one of the best state exhibits shown at the exposition.

Other subjects discussed were fire insurance in the clay plants, workmen's compensation insurance and freight rates.

Following the annual address of President Ringle, who spoke exclusively on the necessity of some concerted action towards creating local demand, the following resolution was adopted:

Resolved, That it is the sense of this convention that every manufacturer of clay products in the State should advertise the superiority of his product in the newspapers within his sales territory, and that the officers of this association arrange for copies of practical advertisements of this nature to be distributed to members of this association.

Editor Wells of "Brick and Clay Record" indorsed the

suggestion of President Ringle and told of the recent action of the state conventions in Illinois and Iowa, where concerted action was taken in launching a local publicity campaign. He urged the importance of individual advertising where there were only one or two plants in a community, and suggested that district associations be formed along the same plans as adopted in Iowa and Illinois.

The convention was called to order Wednesday morning, Jan. 29, but little was done, outside of registration, until the afternoon session. Following the address of the president, reports of the several standing committees were read. The first paper of the convention was read by J. G. Hamilton, of Grand Rapids, who chose as his subject, "A Year of Brick Business Under the Reduced Rates."

Iverson C. Wells, editor of "Brick and Clay Record," was scheduled to discuss the proposed exhibit of the Wisconsin association at the Clay Show, but was unable to be present at the afternoon session, and H. S. Simpson, of the Clay Products Exposition Co., occupied his time and extended an invitation to the association to participate as a body in the publicity movement of the exposition. Further discussion of the subject was postponed until the following day, when Editor Wells made a brief talk on the advantages of having an exhibit at the Clay Show. Following this second day's discussion, action was taken and the exhibit assured.

After the appointment of special committees the convention adjourned.

The President's Address.

The address by President Ringle, in full, was as follows:

We are met in the 13th annual convention of our state association, not only to carry on routine convention proceedings and to carry out the prepared official program,

but also to inaugurate and place into effect methods of betterment in the line of business in which we are engaged.

All will admit that the latter proposition presents an extensive field worthy of our best effort, and in view of that which is transpiring about us in the building line, it is apparent that the work at hand deserves the enthusiastic support of all engaged in the clay working industry.

We not only owe it to ourselves, but also to the general public, to constantly refresh the public mind of the fact, that the burned clay product, whether for building or drainage purposes, is in every way superior to all competitive materials and is the best investment.

We are living in an age of publicity. Every industry, every enterprise must participate, or allow the exploiter of an inferior substitute to take the cream from the crock.

The work of the Building Brick Association of America serves as a foundation, but there is other, perhaps more practical work at hand.

It may be because they do not appreciate the necessity, the benefits and possibilities of association membership, that there are still manufacturers of clay products in this state who are not members of this organization, and yet beyond question, there is not a member of this association or manufacturer out of it who could not in justice to his business and with profit pay ten times the annual dues if properly expended in the work of the association.

We are doing an act of injustice to the industry we represent, to further continue to rely upon the superiority of our product under the conditions referred to. To answer the question, what shall we do? It is possible we may not all agree upon the best method of procedure.

If it is not practical to arrange a system of publicity by the association, then it should be the business of every manufacturer of brick and clay products to persistently advertise in the newspapers in his territory the reason why clay products should be preferred above all others for building purposes.

Can not every brick manufacturer from time to time procure the publication of a notice something like the following:

When you build, use brick.

It is the best and cheapest building material.

It is insurance for all time; will not burn nor decay.

It adds character and beauty to your building.

It does not depreciate in value and is the best investment.

A constant and persistent renewal of the fact in the public mind, that brick is the best building material, will bring results.

It will increase the sale, insure better buildings, decrease the fire loss and procure the growth of several blades of grass where none grew before. There is not a clay

product manufacturer but would be largely benefited by the small expenditure. It will be like placing bread upon the waters to return a thousand fold.

There are but few of us who are in the business for our health. The clay industry of Wisconsin can afford to be boosted. Our state has abundant raw material which should be utilized for the purpose for which it is designed.

This association has already accomplished something in the better regulation of freight rates on clay products, a direct benefit to every manufacturer. We have no right to rest there. It is our duty to labor for an increase of the consumption of our product.

I consider the question of publicity a most important subject for consideration. We should not adjourn without making provision for some practical method.

The clay product exhibit at Chicago deserves our support. Wisconsin should be represented. We should at least make arrangements for a joint exhibit.

Our secretary has prepared an excellent program, which will be not only interesting, but beneficial to all in attendance.

I congratulate the members of this association upon this manifestation of interest in the work before us. We have reason to congratulate ourselves upon the fact that we have a secretary of this association who is rendering such valuable services towards the greater development of the Wisconsin industry.

We who are more directly interested should not hesitate in giving him our enthusiastic support and co-operation.

The second day's session was more largely attended and was made unusually interesting because of the presence of Prof. A. V. Bleininger of the the United States Bureau of Standard, who read two papers during the day. The first paper by Prof. A. V. Bleininger was on drying. He treated the subject in his usual scientific manner, and his paper, which will be printed in full in these pages at some early date, was replete with instructive features. His second paper on "The effects of time burning," was equally instructive. In this paper, Prof. Bleininger not only took up the entire subject of burning and its many complex problems, but also described the various types of kilns and pointed out the advantages and disadvantages of each. This paper also, will be printed in "Brick and Clay Record" at some future date.

Manufacture of Tile Discussed.

"Tile Drainage Conditions and Requirements in Wisconsin" was one of the papers read at the morning ses-



The above view of those in attendance at the Wisconsin Convention was taken in front of the Republican House, convention headquarters, Milwaukee, Wis.. Reading from left to right the names are: Geo. Potts, H. P. Mower, Erwin Fricke, Iverson C. Wells, F. R. Mahurin, L. Halgh, Oscar Zimbal, treasurer of the association, E. G. Biechler, W. J. Craney, D. C. Haeger, G. S. Brubaker, F. Vogt, T. A. Randall.

sion. It was by Prof. E. R. Jones of Madison, and, in connection with the discussions that followed, and the paper on "Present Conditions of Tile Manufacture in Wisconsin," by Osear Zimball of Sheboygan, proved a highly interesting part of the day's program.

Editor T. A. Randall of "The Clayworker," read a paper on "Co-operative Fire Insurance," which elicited considerable discussion. This paper was followed by one on the workmen's compensation act, by William Fricke of Wausau.

The last day's session of the convention was devoted to the unfinished business and the report of the various committees. The most important committee report was that of the resolution committee. T. A. Randall was the chairman of this committee and the report, after paying a tribute to a deceased member and extending a vote of thanks to the Milwaukee contingent for their hospitality, said:

Whereas, There is now established a system of industrial education in this state for the purpose of training young men and women in the useful arts and trades, and,

Whereas, There is urgent need of skilled workmen in bricklaying and masonry; therefore, be it

RESOLVED, That we heartily endorse and support the plan of industrial education now in practice and urgently request that the industrial school boards in all those cities having industrial or continuation schools include courses in bricklaying and masonry as an essential part of the system of industrial education, whenever a class of 15 or more can be organized to take a course in bricklaying alone, or whenever a class of 15 or more can be organized in bricklaying and masonry combined.

Whereas, The Publicity Movement, which finds expression, in a large measure, in the great Exposition of Clay Products, to be held in the Coliseum, Chicago, February 26th to March 8th, 1913, appeals forcefully to every progressive clayworker throughout the land, each and all of whom will, directly or indirectly, profit thereby; therefore, be it

RESOLVED, That we, the Clayworkers of Wisconsin in convention assembled, pledge our unstinted support to the Clay Show, agreeing to make exhibits as we may consistently arrange to do so, and prove our faith in the superiority of clay products over all competing materials, by lending every possible support and encouragement to the Clay Products Exhibition, and by bringing same to the attention of local architects and builders and by attending in person, thereby deriving the greatest possible benefit therefrom.

One of the most important actions taken by the convention was that on the proposed movement to have brick-

laying courses established in all industrial schools maintained by the State. These schools teach the various trades and several of them already have bricklaying courses. The Stout Training School at Menominee, Wis., has been teaching bricklaying successfully and during the last six months the facilities for handling pupils in this branch of the work have been more than doubled. Using the Menominee school as a model, the Wisconsin clayworkers propose to establish other schools of like nature throughout the state.

In accordance with the requirements of the system, only ten pupils are necessary to establish a course in any city, and the convention went on record as proposing to stir up sufficient interest to make these courses possible in most of the centers of population.

The convention closed with the election of officers. President Ringle and Secretary Weidman were retained in office another year. A. W. Hilliker of Racine, was elected vice-president and Oscar Zimball of Sheboygan, treasurer.

NORTHWESTERN LINES UP FOR PUBLICITY.

Minneapolis Convention Takes Action on Local Advertising Campaign and Question of Freight Rates.

The Northwestern Clay Association, in session at Minneapolis, Minn., Feb. 11, took definite action on the local publicity movement which has been inaugurated by associations in several states. The question of freight rates also was discussed at length and considerable time was devoted to this important subject.

The publicity discussion followed the reading of a short paper sent by Iverson C. Wells, managing editor of "Brick and Clay Record," who was unable to be present. Secretary Axel Anderson read the paper which gave a brief resume of the work planned by the state associations of Illinois, Iowa and Wisconsin, in recent conventions.

Considerable enthusiasm was manifested in the subject and a committee was appointed to formulate some definite plans. It was the voice of the convention that all the available funds possible be used in some sort of a state wide publicity work. A number of members, owners of plants in the larger cities, went on record as favor-



S. Weidman, J. P. McLain, S. Gunther, A. E. Ray, A. O. Wachter, J. S. Ringle, president of association, A. V. Bleining, Edward Fricke, A. W. Hilliker, vice president association, H. W. Carter.

ing local advertising campaigns as a means of creating a greater demand for their products.

George W. Denison, of the Ohio Clay Company, Cleveland, Ohio, was a visitor at the convention, and in view of the aggressive advertising his concern has been conducting, was much interested in the publicity discussion. The Ohio Clay Company manufacturers the Denison interlocking tile and pushes sales by a systematic advertising campaign in the Cleveland daily papers. Mr. Denison told of his company's experience in advertising and gave the members some very valuable suggestions.

The convention opened at 10 o'clock in the forenoon. The reading of the committee reports, the address of President E. H. Cobb, a paper by A. L. Ball, of Minneapolis, on "The Modern Way of Hauling Brick," and one by Mr. Denison on "The Klose Continuous Tunnel Kiln," and the election of officers, occupied the entire day's session.

President Cobb, Secretary Axel Anderson and the other officers who served during the past year, were re-elected as an attestation of appreciation for their services.

In the evening a banquet was held at the Hotel Radisson, and the following program rendered, E. H. Cobb acting as toastmaster.

Address—"The City's Greetings," Wallace G. Nye, Mayor of Minneapolis.

Address—"The Best Building Material, and Why," J. F. Nixon, Duluth.

Address—"The Value of Co-operation in the Clay Business," P. O. H. Lenz, Minneapolis.

Address—"The Value of Competition in the Clay Business," I. J. Covey, Minneapolis.

Address—"Benefits of Industrial Education to the Clay Business," A. C. Ochs, Springfield.

Address—"Clay Brick vs. Sand Lime Brick," H. N. Leighton, Minneapolis.

Address—"Delivering the Goods," M. C. Madsen, Hutchinson.

Address—"Advertising Clay Products," F. B. Martin, Minneapolis.

Address—"Condition of the Brick Business in Wisconsin," J. P. McLean, Menomonie, Wis.

Address—"Conditions of the Brick Business in Minneapolis," G. L. Rose, Minneapolis.

Address—"Conditions of the Brick Business in the Far North," John Lowry, Duluth.

Address—"The Business Outlook in General," Asa Paine, Minneapolis.

There was a comparatively small attendance, at the convention and banquet, but those present made up for the lack of numbers by enthusiasm.

KENTUCKY CLAYWORKERS ORGANIZE.

State Meeting Called—Large Attendance Expected—Important Measure to Be Acted Upon.

Washington's Birthday, 1913, will probably be the natal date of a new state association of Kentucky clayworkers and clay miners. The ball has been started rolling, and it has already gathered size and momentum practically insuring the successful completion of the project.

A meeting of the miners and manufacturers of clay of the Bluegrass commonwealth will be held Feb. 22 at Paducah, a hustling city in the western portion of the state. At this meeting, matters which have been agitated for some time in the clayworking industry will be taken up and it is confidently predicted that a representative aggregation of Kentucky brick and tile manufacturers, potters, terra cotta manufacturers, sewer pipe producers and other craftsmen from the allied trades will be fully organized.

The date of the meeting has been set at a convenient time, when business is naturally at an ebb, so that not a clayworker who is interested in his own welfare and the prosperity of the industry of the entire state may plead a press of duties as the cause of absence. Consequently, delegations from every section of the state are expected and it is highly probable that representative craftsmen from surrounding states, as well as trade leaders who are well versed in the work of establishing state and local bodies, will be present. Only within the past year has the Kentucky Manufacturers' Association, representing the industries of the state at large, been in existence, but the good work which it has accomplished has convinced the brick and tile interests that there is a fine opportunity for the institution of a similar organization for the exclusive purpose of promulgating the gospel, "Build with brick."

A great deal of interest in the project is manifested in Louisville, and it is a certainty that a creditable representation from the trade of the metropolis of the state will be present. Whatever differences there may have existed among the members of the Louisville Brick Club, which dissolved some time ago, may well be sunken in the consideration of organizing an association to represent the entire state. T. Bishop, president of the Southern Brick & Tile Company and formerly secretary of the local body, an enthusiastic advocate of association work in the trade, will probably attend the Paducah convention, along with other Louisville members of the trade.

The establishment of an experiment station under Federal jurisdiction to determine chemical analyses of Kentucky clays is only one of the interesting and highly beneficial projects which the backers of the proposed state fraternity have in mind. It is the belief of every clayworker in Kentucky that the value of Bluegrass shale and mud deposits is only about half determined, and that a great field exists for scientific research in this line with the view of inducing a greater investment to develop the natural wealth afforded in the best possible manner.

Other matters which will command the attention of the tradesmen at the coming meeting, when they are setting upon its feet a big new association, are outlined in a communication which J. W. Williams, of the Cooley, Ball & Sagger Clay Company, of Hazel, Ky., recently addressed to the Committee on Ways and Means of the House of Representatives at Washington, D. C. Discussing the tariff on China clays, Mr. William stated:

"Mr. Peter W. Morgan, in behalf of the American Clay Producers' Association, has gone into details in regard to mining the China clays, or Kaolin, and has given your committee the prices, f. o. b. the mines, of the product. He shows that the industry has materially reduced the price of imported clays. Practically the same thing that is true of their industry holds with the ball and sagger clay mines in Kentucky. In these deposits in Kentucky, Tennessee and Illinois, if I am correctly informed, our ball clay has a protection of only \$1 per ton. We do not ask you to raise it, but are willing to risk your judgment in lowering the duty. I take it this was done as a special favor to the pottery manufacturers, who are heavy users of ball clay, and they use today three tons of English to one of American, although the analysis of the English compared with the American product is really more favorable to American ball clays than to American china clay. Proof of this is that the American floor, wall and art tile manufacturers are today successfully competing with the world in tile made exclusively of American clays. We respectfully ask that you do not disturb this industry, which is making the best product on earth of its kind."

CERAMIC SOCIETY MEETS AT WASHINGTON.**The Fifteenth Annual Session Opens Feb. 24 and Continues Five Days at Raleigh Hotel.**

The fifteenth annual session of the American Ceramic Society meets this year at Washington, the opening date being Feb. 24. A five-day program has been arranged by Prof. Edward Orton, Jr., the secretary. It follows:

Monday, Feb. 24.

A meeting of the Board of Trustees will be held in the Secretary's room, in the Raleigh Hotel, at 8:00 P. M., to transact accumulated business.

Tuesday Feb. 25.

Presidential address—Arthur S. Watts, Columbus, O.
Informal address—By Joseph A. Holmes, Director Bureau of Mines.

Tuesday, Feb. 25.

Informal address—By F. W. Clarke, Chief Chemist, U. S. Geological Survey.

Dr. Clark will make some remarks upon the needs of pure research in explaining the processes by which rocks break down into clays.

The Brick Industries of Europe—By G. Wson. Cronquist, Sweden.

Mr. Cronquist is in America studying the American clay industries as the representative of the Swedish Government. He has previously studied the clay industries of Europe in a similar way.

Informal address—By S. W. Stratton, Director Bureau of Standards.

The Ceramic Department of Iowa State College—By Amos P. Potts, Ames, Iowa.

An Experiment in Ceramic Education—By Herford Hope, New Brighton, Pa.

Clay Deposits of the State of Oregon—By Samuel Geijsbeek, Portland, Ore.

The Quartz Content in "Graphic" Pegmatites—By Arthur S. Watts, U. S. Bureau of Mines, Columbus, O.

A Commercial Method of Testing Feldspars—By Johannes Minneman, Barberton, O.

The Effect of Magnesite, Calcite, Etc., upon Leda Clay—By J. Keele, Toronto, Canada.

Details of a Successful Gravity Hauling System Operating upon Low Grades—By Frank H. Riddle, Abbotsford, B. C.

Use of the Casting Process for Large Clay Wares—By C. J. Kirk, Newcastle, Pa.

A Process of Making Sanitary Wares—By J. B. Shaw, Pittsburgh, Pa.

Shop Notes (Porcelain Manufacture)—By Herford Hope, New Brighton, Pa.

The Use of Cost Figures in Plant Administration—By Dwight T. Farnham, Seattle, Wash.

Steatite as a Body Component—By Cullen W. Parmelee and George H. Baldwin, New Brunswick, N. J.

Some Data on the Relative Density of Structure of Bodies, Compounded from Feldspar, Clay and Flint—By Amos P. Potts, Ames, Ia., and Harry Knollman, Columbus, O.

Some Data on the Deformation Points of Mixtures of Quartz with Potash Feldspar and with Soda Feldspar—By Arthur S. Watts, U. S. Bur. of Mines, Columbus, O.

The Coefficient of Expansion of Porcelain—By R. C. Purdy, Worcester, Mass.

Adjusting Engobes—By R. T. Stull, Champaign, Ills.

Rational Analysis and the Fitting of Glazes—By Charles F. Binns, Alfred, N. Y.

A Study of the Relation between Fusibility and Heat

Range in Glazes—By Homer F. Staley, Columbus, O.

The Cause of Mattness in Glazes—By A. R. Heubach, Alfred, N. Y.

Matt Glazes—By Forrest K. Pence, Columbus, O.

Note on Matt Glazes—By Amos P. Potts, Ames, Iowa.

A Simple Graphic Method of Recording the Operations of Kilns—By F. H. Riddle, Abbotsford, B. C.

Pottery Firing by Pyrometry—By E. C. Stover, Trenton, N. J.

How a Continuous Kiln Fired by Producer Gas Can Be Made to Operate Satisfactorily—By S. Geijsbeek, Portland, Oregon.

Miniature Gas Producers and Kilns—By E. Schmatoola, New York, N. Y.

Influence of Time Upon the Rate of Vitrification—By George H. Brown and G. A. Murray, Bureau of Standards.

The Effect of Over-Burning Upon the Structure of Clay—By A. V. Bleininger and E. T. Montgomery, Bureau of Standards, Pittsburgh, Pa.

The Viscosity of Porcelains at Kiln Temperatures—By A. V. Bleininger and Paul Teetor, Bur. of Standards. V. Bleininger, Bureau of Standards, Pittsburgh, Pa.

The Testing of Floor Tile—By F. B. O'Connor, Ithaca, N. Y.

Results of Rattler Tests Upon Blocks Taken from Brick Pavements of Various Age—By George H. Brown, Bureau of Standards, Pittsburgh, Pa.

Some New Applications of Recently Developed Refractories—By F. T. Havard, Madison, Wisconsin.

The Development of Special Refractory Bodies—By E. T. Montgomery, Bureau of Standards, Pittsburgh, Pa.

The Type of Refractory Materials Required for Lining Rotary Cement Kilns—By Harold O. Henry, Fenton, Mich.

The Melting Points of Refractory Materials—By C. W. Kanolt, Bureau of Standards, Washington, D. C.

Glass Standards: A Necessity—By Alexander Silverman, Pittsburgh, Pa.

Some Chemical Reactions of Interest to the Plate Glass Chemist—By F. Gelstharpe, Creighton, Pa.

Devitrification in Various Types of Glass—By Homer F. Staley, Columbus, Ohio.

Uses and Effects of Varium Oxide in Glass—By R. L. Frink, Lancaster, Ohio.

Leadless Enamels for Cast Iron—By Homer F. Staley and George P. Fisher, Columbus, Ohio.

Comparative Tests of Various Opacifying Agents Used in Enamels—By Homer F. Staley and Samuel Rusoff, Columbus, Ohio.

Properties of Portland Cement as Affected by Different Burning Temperatures—By P. H. Bates, Bureau of Standards, Pittsburgh, Pa.

The Electrical Conductivity of Clays in the Plastic and Suspended State—By A. V. Bleininger and C. S. Kinnison, Bureau of Standards, Pittsburgh, Pa.

Strength Changes Noted in Laboratory Drying—C. H. Kerr and R. J. Montgomery, Creighton, Pa.

Strength of Clay Bars as Influenced by the Temperature of Drying—C. H. Kerr and R. J. Montgomery, Creighton, Pa.

On the conclusion of the literary program, the Society will at once take up the final business session. In case, for any reason, it is not possible to complete the business of the Society on Thursday afternoon, a meeting will be arranged for Friday morning, Feb. 28th.

Friday it is planned to make an excursion to visit the Bureau of Standards and the Geophysical Laboratory of the Carnegie Institution.

CLAY-WORKERS TO FORM SECRET ORDER

Grand Temple of Ancient Order of Chaldeans Will Be Launched During Clay Show and Convention Week

By A STAFF WRITER



THE Ancient Order of Chaldeans, a secret society composed exclusively of clay workers and allied interests, and organized solely for social and fraternal purposes, will be launched on the evening of March 5 in the main banquet room of the Auditorium Hotel, Chicago.

Several hundred candidates are expected to be initiated into the mysteries of the new order and there is no single event planned for the entertainment of the visitors to the Clay Show and Conventions that will afford so much real, wholesome enjoyment as will this.

While the order will be formed for the serious purpose of teaching fidelity, friendship and forbearance and bringing its members into a full realization of their duty to mankind, its founders have not overlooked the fact that a judicious sprinkling of refined humor is necessary and the ritual, therefore, has been written with that idea uppermost.

The evening's festivities will open with the formal organization of the order. Following this brief ceremony will come the initiation of the several hundred candidates.

Those who are responsible for the writing and preparation of the ritual and floor work give the assurance that no secret society offers more or better opportunity for real entertainment than that of the Chaldeans. There is said to be not a dull moment in the entire initiatory work, and an evening spent with the Chaldeans will be more enjoyable than at a show or circus.

Following the initiation of the candidates there will be a buffet lunch and smoker, during which a cabaret show will be given, several noted vaudeville stars having been engaged for this entertainment.

The Ancient Order of Chaldeans owes its origin to the desire of the members of the entertainment committee of the Chicago Clay Club to afford some special program to the visitors of the Clay Show and Conventions. At first a smoker and lunch with a vaudeville show at the close was planned. By the process of evolution, however, one suggestion and another was made until finally the germ of a society or permanent club was planted. This was nursed and cultivated until it developed into a full-fledged order, with a charter and the power to install subordinate lodges and spread its doctrine of fidelity, goodfellowship and forbearance all over the clay-working world.

It can be seen, then, that it is the plan of its founders to have the Ancient Order of Chaldeans a permanent organization. The annual meeting of the Grand Temple will always be held wherever the Clay Show and Con-

ventions of the National associations are held. It is proposed to organize State Temples which shall have annual meetings each year with the State Associations. Later, as the influence of the Chaldeans spreads, it is probable that local Temples will be organized in cities where there are a sufficient number of clay workers to justify it.

The Chicago Temple which is to be organized during the Clay Show, of course, will be the parent, or Grand Temple, and its officers will look to the organization of the subordinate Temples.

The Ancient Order of Chaldeans receives its name from the Chaldeans, one of the oldest, if not the oldest, civilized and cultured races of the world's people. This ancient race we know to have existed at least 3,800 years before the birth of Christ. The Chaldeans had important cities, each governed by a priest king. They had libraries, the books consisting of clay tablets, each page being properly numbered and indexed. They lived in brick houses, walked on brick-paved streets and ate from clay dishes.

The Chaldeans, as a matter of fact, were the first to practice the art of clay-working in a practical way. Chaldea, unlike Egypt, had no stone, and the people, through necessity, were forced to turn to clay, of which there were great deposits. They became very proficient in the art.

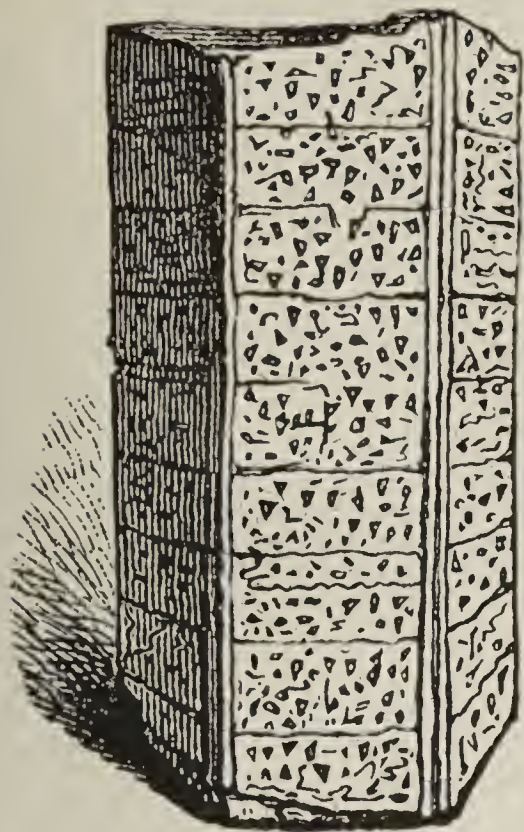
Our first glimpse of Chaldea is of a Turanian people living in great cities of brick temples and houses. These brick were sun-dried and cemented with bitumen. The interior of the temples, not infrequently, were lined with enameled brick of various colors and designs. The houses were of brick and built on high platforms. The streets were paved with brick slabs or blocks. The tableware was of clay and the people were skillful in shaping pottery and terra cotta ware and images.

Clay tablets exist today which the early Chaldeans used to write on in cuneiform characters. Terra cotta cylinders were covered with cuneiform inscriptions and used as signets. The dead was buried in huge clay jars or terra cotta dish-covered tombs, or laid to rest in arched brick vaults.

Chaldea had no natural boundary or defense and was singularly open to attack. There were constant wars with the fast rising-power of Assyria and in the 13th century the Chaldeans were conquered by their northern rivals. The period of their servitude lasted nearly seven centuries, during which time they taught the Assyrians their art. Being, however, a sturdy, fiery, impetuous, warlike race, they often revolted. At one time—known in



Sacred Symbol of the Ancient Order of Chaldeans.



Terra Cotta Cylinder.

world. This lesson is expected to encourage the modern workers in clay to go out on to the battlefield of business supremacy and fight anew the war that will place them at the head of all competing materials.

The story of the Chaldeans may be found in any school history and it is worth while reading, for it gives added strength to the claim that "By Frost, nor Fire, nor Flood, nor even Time, are well-burned Clays Destroyed."

Resting in many of the world's great museums there are relics of the monuments, institutions, arts and manners of this ancient race. Accompanying this article there are several illustrations showing some of these clay tablets, bricks and other craft work of the Chaldeans which have been taken from the ruins of their cities.

The man-headed winged bull, which is shown among these illustrations, was unearthed several years ago by some European scientists. It is colossal in size and is made from terra cotta and is in a perfect state of preservation.

This bull was worshiped by the Chaldeans as their most important god. Although their religion taught the existence of a Supreme Deity, just as the Christian, Jewish and Mohammedan religions of today do, it was their custom to pay tribute to these material gods or idols.

Because of the importance attached to the man-headed winged bull, the Ancient Order of Chaldeans has adopted it as its symbol, and, as a consequence, all its printed matter, its emblem buttons and lodge regalia will bear its familiar picture.

It is more than likely, too, that an exact replica of the man-headed winged bull, as unearthed in the ruins of the ancient Chaldean city, will be made in terra cotta in time for exhibition during the Clay Show. This symbol will be kept in the Grand

the era of Nabonassar (737 B. C.)—they achieved a temporary independence, and, on the fall of Nineveh, about 606 B. C., they at once rose to power, founding the Second Babylonian Empire.

It is from the story of the struggle of this race of people to throw off the yoke of tyranny and servitude and resume their place as a great nation that the Ancient Order of Chaldeans receives its lesson which it proposes to teach to the clay workers of the

Temple in Chicago and later, as subordinate Temples are formed, duplicates will be presented them, for it is willed that no Temple fires be lighted only in the presence of the sacred symbol.

The Auditorium Hotel was secured for the launching of the new order because of the unusual facilities afforded by this hostelry. The Auditorium is just across the street from the Congress Hotel where the convention headquarters will be and is connected with it by a tunnel that goes under the street. This arrangement will make the lodge rooms of the Chaldeans convenient for the convention members.



Chaldean Clay Tablet.

IOWA STATE DRAINAGE ASSOCIATION.

Annual Meeting at Ft. Dodge, Feb. 18-19, Promises to Be of Unusual Interest.

The program planned for the annual meeting of the Iowa Drainage Association, Feb. 18 and 19, promises to be of great interest and value. The citizens of Fort Dodge have interested themselves in plans for entertaining the guests and making the convention a success. One feature is to be a "smoker" on Tuesday evening, at which some interesting talks and discussions will be given.

The dates for the meeting were chosen in order to make it possible for any one in attendance to go directly from the Iowa State Drainage Association convention to the annual meeting of the Iowa Engineering Society, which is to be held in Sioux City, February 20th and 21st.

Prominent speakers will be present from South Dakota, Illinois and Minnesota, in addition to those who are recognized authorities in Iowa.

The program is, in part, as follows:

Resume of Work of I. S. D. A.—G. G. Wheat, Estherville, Ia.

"Co-operation in Land Drainage"—F. O. Nelson, Estherville, Ia.

"Financing Drainage Proposition"—Ray Nyemaster, Davenport, Ia.

"Some Facts from an Engineer's Notebook"—Seth Dean, Glenwood.

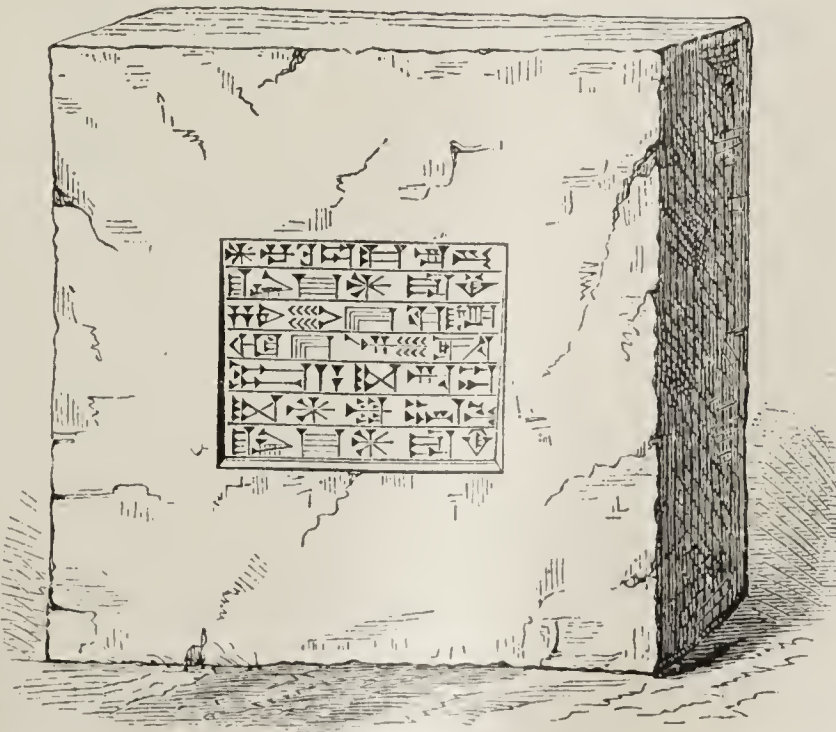
"Some Drainage Problems"—Prof. J. T. Stewart, College of Agriculture, St. Paul, Minn.

President's Address—Hon. H. M. Sparboe, Webster City, Ia.

Smoker given by the Ft. Dodge Commercial Club in honor of the Iowa State Drainage Association.

"Drainage Work in South Dakota"—State Engineer Lea, Pierre, S. Dak.

"Roads and Drainage"—Prof. T. H. McDonald,



How the Chaldeans Made Brick.

Clayworkers

Become Members of

The Ancient Order of Chaldeans

**This is the
Sacred
Symbol
of the
Chaldeans**



**This Image was
found in the
Ruins of a City
that existed
4,000 years be-
fore Christ**

**It was made of
Terra Cotta**

This is a secret fraternal and social organization which will be formally organized with a grand initiation of several hundred candidates on the evening of Wednesday, March 5, at the Auditorium Hotel, Chicago.

The lesson it teaches is founded on the story of the oldest civilized people of the world—the Chaldeans—who lived in brick houses, walked on brick streets, wrote on clay tablets, ate from clay dishes and cooked in clay utensils nearly 4,000 years before Christ.

The purposes of the order are to encourage the spirit of Fidelity, Fraternity and Forbearance, and any reputable Clayworker or member of the allied industries is eligible to membership.

Have a Good Time

At the Clay Show and Conventions

The Ancient Order of Chaldeans

This new order, which will be launched during Clay Show and Convention week, will be to the clay worker what the "Hoo-Hoos" are to the lumber man and the "Sons of Jove" to the electrical people.

Wear a Button—the Sacred Man-Headed Bull

It means you are a good fellow among good fellows. There is not a dull moment in a Chaldean Temple.

Initiation, Buffet Banquet, Smoker, Vaudeville Show

The institution of the Grand Temple of the Ancient Order of Chaldeans will be marked by these festivities and you can not afford to miss it.

The Membership Fee and Annual Dues—\$3.00

This entitles you to all the privileges of the order and makes you a full-fledged Chaldean. Read about the Chaldeans in the reading pages—the story is told in full.

TEAR OFF AND MAIL THIS TODAY

NOTICE OF APPLICATION

Iverson C. Wells, Temporary Secretary,
Ancient Order of Chaldeans,
Care of Brick & Clay Record, Chicago.

I am directly connected with the Clay Product Industry or its allied interests and desire to become a member and I will be in Chicago during the Clay Show and Conventions and will make a formal application for membership at that time.

(Signed) _____

(Address) _____

HEADQUARTERS CONGRESS HOTEL, Room 1128

CHICAGO'S WELCOME

Clay manufacturers of the world, welcome to Chicago!

February 26 to March 8, inclusive, two great events in the industry which you represent will occur in this city.

Your various national and state organizations, headed by the great parent body—the National Brick Manufacturers' Association, are scheduled to hold their annual sessions during that period.

The Second Annual Clay Products Exposition, embracing exhibits from the United States, Canada and European countries, will be in full blast.

These eleven days will be **YOURS**, clay manufacturers—yours to **PROFIT** by and to **REJOICE** in.

If you come and be **ONE** of us we assure you there will be no disappointment.

The preparations for your entertainment have not been half-hearted. Neither have they been of a day, or a week or a month.

Those, to whom the duty of arranging for these two great events has fallen, have put into their work all the enthusiasm and all the sincerity of purpose and all the unselfishness of action possible by **ANY** set of men.

Beginning with the closing of the last National conventions and the dropping of the curtain over the final scenes of the last Clay Show, plans were laid and the active preparations for the 1913 events launched.

And during the past twelve months there have been no idle moments.

President Bloomfield and Secretary Randall of the National Brick Manufacturers Association, aided by their associates, have left no stone unturned in their efforts to make the meeting of the parent body the very best and most profitable ever held.

President Deckman and Secretary Blair of the National Paving Brick Manufacturers Association, likewise, have been active in the arrangement for the business session of their organization.

The same is true of President Simpkins and Secretary Fiske of the Building Brick Association of America, as it is with the officials of the other organizations which will meet in Chicago during these twelve days.

Neither have the officials of the Clay Show been amiss in their duties.

Aided by the strongest sort of an organization—the Chicago Face Brick Association, and by the

various minor interests and clubs of the city, the Exposition officials have been untiring in their efforts and the 1913 Show will go down in the history of the industry as the greatest single event ever held for the boosting of clay products.

The task—the preparations for these two great events, has been a stupendous one, and wonderful it is that **SO MUCH COULD BE DONE** in such a brief space of time as one year.

Those who have given unselfishly of their labor and their money are resting on their oars now. **THEIR** work is done.

The monuments to their enterprise, their progressiveness and their efforts stand waiting for **YOU**.

Whatever success the Clay Show and the Conventions may bring depends now upon **YOU**, clay manufacturers of the Nation.

The burden of responsibility has been lifted from the shoulders of those who have builded and it has been placed on yours, Fellow Clay Manufacturers.

To the extent you give your support, will be measured the success of the Exposition and the Conventions.

You are on trial, Clay workers of the Nation.

And your judges will be the people—the buyers of building materials, the buyers of sewer pipe, the buyers of paving block, the buyers of drain tile, the buyers of pottery, fire brick, encaustic tile—the buyers of all burned clay products.

And these judges will be in great numbers for more than quarter a million people will pass through the doors of the Coliseum in those eleven days.

If you have failed to do **YOUR** duty as an exhibitor—if you have failed to come to Chicago and thus give moral support to the Clay Show and to the conventions, your failure will be noted.

The buying public is a severe judge and it has the recent Cement Show at the Coliseum to make comparisons with.

The buying public is a fickle one, Clay Workers.

Most men are impressed with **NUMBERS**—with **MAGNITUDE**—with **GREATNESS**. They **LIKE TO FOLLOW IN THE WAKE OF THE BAND WAGON**.

You have covered up your pug mill for the season—your plant is idle and there is no excuse—no reasonable or satisfactory excuse, why you cannot spend this short season of enjoyment and profit with other progressive clay workers in their effort to give burned clay the greatest boost it ever has had.

Come to Chicago Feb. 26—March 8—a welcome awaits you. Help make the Clay Show and the Con-

ventions two events of **MAGNITUDE**— of **IMPRESSIVE GREATNESS**.

Do this for **YOUR** sake and for the sake of the industry that has nurtured you and clothed you and yours.



THE LESSON FROM FORD

Sometimes it takes a good jolt to awaken us to the realization of what our duty is.

We are too prone to take things easy, as long as everything is working smoothly.

The average man is like the Irishman who never had paid much attention to religious matters. Pat was a happy-go-lucky sort of a fellow. He took things as they came ordinarily, enjoyed life and had little to complain of.

One day the priest of his parish stopped him on the street and chided him for not attending services and looking after his spiritual welfare a little better.

Pat waved him aside with his hand, smiled good-humoredly and replied that he wasn't worrying.

In the next six months the priest met Pat several times on the streets and took occasion to remind him of his religious duties. Pat was no more impressed on these occasions than before.

One day Pat got a side-swipe by an automobile. He was picked up and taken to a hospital on a stretcher.

An hour or so after, Pat came to. He opened his eyes slowly and saw the sober-faced nurses standing near his cot and made haste to glance at his splint-covered arms and legs.

"Am I h-ur-rt very badly, me gir-rl?" he inquired with considerable anxiety.

The nurse he had addressed turned her head to one side and heaved a heavy sigh.

Pat looked at the other nurse standing near his cot. His voice trembled. Swallowing a great lump that had lodged in his throat he tried to put the same question to her, but the nurse anticipated him.

"I am afraid, my friend," she said as she placed the crucifix in his hand, "that you are." She knelt at his side and raised her eyes in supplication.

Pat looked at her for a brief second and then his eyes drifted to the cross he held in his bruised hand. A startled look came onto his face. He clutched the cross and raising himself as far as his crushed body would permit, shrieked:

"Send for Father O'Brien, at once!"

Pat's case is similar to the brickmakers on the Pacific coast whose cry for help is chronicled on another page.

So long as there wasn't any **IMMEDIATE** need

DETHRONE HIM!



for a strong association to fight their battles they were not worrying, but there came a time when they **DID** need help and, like Pat, they waited until it was too late.



DETHRONING A KING

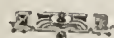
Dethroning an objectionable king is a very small matter if you go about it in the right way and have enough of the right sort of people back of you.

In the building material industry there is a usurper on the throne.

By all the laws of nature Clay Products should be occupying the seat now unjustly held by this intruder.

If the supporters of Clay Products, the Contender, only would get together under **ONE** Leadership—co-operation, there would be no question about their ability to unseat the Pretender and give to the **RIGHTFUL** heir the seat that **JUSTLY** belongs to him.

The cartoon in this issue supplies the thought for this editorial. Be guided by its suggestion.



THE CASE OF THE BRICKLAYER

It has been said in these columns that one of the greatest handicaps the brickmaker has in competing

with the manufacturers of other building materials is the bricklayer himself.

And the criticism was well-taken for the man that lays the brick in the wall has been indifferent to the problems that confront the man that makes the brick he lays, if we judge him by his **ACTIONS**.

Yet, while we have been severe in our criticisms and we have taken the bricklayer to task for failing to see the **ADVANTAGE** of co-operation with the man whose prosperity he is **VITALLY** interested in, we haven't been blind to the fact that there are **ALWAYS TWO SIDES TO ANY QUESTION** and we have been perfectly willing to have the other fellow tell **HIS**.

We may bemoan the **SHORT-SIGHTEDNESS** of the bricklayer and still feel that if the matter were brought to him in the **PROPER** light he would see his error.

We may feel disposed to question his **SINCERITY** as long as he does not show a disposition to set himself right, and still have a hope that he will throw aside the cloak of indifference and **MANIFEST A WILLINGNESS TO MEET WITH US ON A COMMON GROUND**.

This attitude, fraught with frank criticism as it has been, should bring results from any fair-minded set of men, and recent events give every indication that the bricklayers, as a thoroughly organized band of workers, **ARE** a susceptible set of men, who **ARE** amenable to argument and who **WANT** to be fair.

Wherever there are differences existing between two persons or two sets of persons **SOMEONE** must make the first move towards amicable relations or there never will be any amicable relations.

Within the last few days the bricklayers, through their international president and secretary, have seized the bull by the horns and taken the first steps towards breaking down the wall of reserve that has existed as a barrier between these two important branches of the industry—the bricklayer and the brick manufacturer.

That the overtures came unexpectedly and in a broad-spirited way, is not only commendable, but most hopeful for the future.

Elsewhere, in the news section of this issue, there appears some very interesting correspondence that has passed between the management of the Clay Products Exposition Co., and the chief officials of the Bricklayers' International Union.

The first of these letters—penned by Secretary William Dobson of the union, brings with it the offer to prepare a special exhibit by the union showing the numerous concrete failures of recent years.

Later, another letter from Secretary Dobson carries with it the unselfish offer to shoulder a portion of the expense of preparing all the exhibits of the Exposition.

Both of these kind offers are important in themselves and unaccompanied by any other would give the brick manufacturers of the country a most hopeful promise for a businesslike co-operation at no distant day.

But Secretary Dobson, speaking for the executive board of his organization, goes still further and brings a message of goodfellowship and says that his Union, acting for the great body of bricklayers and masons of the country, wants to **CO-OPERATE** in **ANY** and **EVERY** manner possible in furthering the interests of the brick manufacturer.

Read this:

The Bricklayers, Masons and Plasterers' International Union of America certainly is closely akin to the brick-making industry, and we agree that **THERE SHOULD BE NOT ONLY UNITY OF ACTION, BUT ALSO A PERFECT UNDERSTANDING IN ALL THOSE THINGS THAT STAND FOR THE PROTECTION AND PROMOTION OF THE INDUSTRY IN GENERAL.**

The above is an extract from one of the letters which are published elsewhere in full. The offer to join hands with the manufacturer comes on the eve of the annual convention of the National Brick Manufacturers Association which will be held in Chicago, early in March during the progress of the Clay Show and could not have been made in a more opportune time.

That the offer will be accepted goes without saying. It is just this **UNITY** of action and **CO-OPERATIVE** effort the manufacturer has been craving many years.

There should be a full discussion of the problems that confront both peoples.

There should be a "perfect understanding" and there should be formed a tie of as lasting and durable qualities as burned clay itself between these two bodies of men.

The manufacturers are not objecting to organization because they believe in it themselves.

They are not seeking to cut down wages because they believe in keeping up the price of production, whether it is by capital or labor.

They are not seeking to impose any unreasonable demand.

They do believe, however, in amicable relations between two sets of men whose interests are so closely allied and an adjustment of matters that will work out to the best good of all concerned.

And in view of the commendable offer and the encouraging assurances made by the bricklayers' union, and this broad-minded spirit on the part of the manufacturers, let us seize this opportunity to **GET TOGETHER**.

In furtherance of this suggestion it would not be amiss for the National Brick Manufacturers Association to see that President Bowen and his associates are given a **SPECIAL** invitation to meet with its members next month in Chicago.

THE CLAY SHOW DAILY

Following the precedent set at the First Annual Clay Products Exposition held in Chicago last year, "Brick and Clay Record" will issue a daily edition during the Second Clay Show and the annual convention of the N. B. M. A. and kindred organizations.

Unlike, however, the effort of last year, which was conceived and planned on the eve of the big week and without sufficient time for preparations, the Daily Edition of this journal will be in keeping with the standard of excellence upheld in the publication of the regular issues of "Brick and Clay Record."

The Daily will be printed for free distribution and will carry the news of the conventions and the clay show each day.

Special messengers will act as distributors but should you who read these pages fail to receive a copy as they are passed out among the convention and clay show crowds, additional copies will be found at the "Brick and Clay Record" booths at the Coliseum or in "Brick and Clay Record" headquarters, Suite No. 1154, of the Congress Hotel, which is adjoining the Convention Hall.

The Daily this year will have many new features. Aside from a full report of the conventions and the show there will be a special sporting page, gossip of the visitors, news of the theaters, cartoons, editorial comments of the day and illustrations of the main features of the big events.

And don't forget that the Daily is free.



A NEW MAGAZINE

Shortly, the publishers of "Brick and Clay Record" will launch a new magazine of vital interest to the clay manufacturers of the Nation.

The name of this new magazine will be "Ideal Homes."

And, as its name indicates, it will be devoted to the planning, building and furnishing of the IDEAL home.

It is true there are publications devoted to this same subject and most of them are excellent from THEIR viewpoint.

But in all that are printed—and the number is large—BURNED CLAY as a building material receives little credit.

The publishers of these magazines are running their magazines to MAKE money—not to LOSE it.

The policy of their publications, therefore, depends upon the KIND OF SUPPORT they receive.

If the lumber man and the concrete man take the BULK of the advertising, LUMBER and CONCRETE is going to PREDOMINATE in the reading columns and BURNED CLAY is going to TAKE A BACK SEAT.

Clay manufacturers long have realized the necessity for some sort of a national publication that will educate the people to the advantage of using clay products.

They have felt the need of a publication that will boost their products from the front outside cover to the last page in the magazine.

They have wanted a magazine that contained pictures of pretty brick homes and their environments.

They have wished for a magazine that would encourage the use of brick by presenting practical suggestions in the way of working designs and plans—by showing views of handsome homes that others have built of brick—by publishing pictures of attractive mantels and fireplaces, of stately garden walls and winding sidewalks.

They have wanted a publication of national scope—one that goes into the HOMES of the houseowner—into the HANDS of the prospective house-builder—a publication that TALKS burned clay year-in and year-out.

Until now this dream of the brickmaker has been doubtful of realization.

With the exception of the "Brick Builder" of Boston, Mass., which goes chiefly to the contractor and architect, there is nothing printed that fills these requirements.

No publisher could be found who wanted to undertake so stupendous a proposition.

It costs money to issue a magazine and the printer wants to see a PROFIT before he agrees to invest his money.

The publishers of "Brick and Clay Record," occupy a peculiarly fortunate position in the publishing world so far as the issuance of such a magazine as outlined is concerned.

"Brick and Clay Record" is a well-established magazine, devoted to the interests of the MANUFACTURER.

To the clay worker it has tied its star of hope, and whatever of the material goods of this sphere it receives is expected to come from the clayworker as a compensation for its laborers in his behalf.

Naturally, then, whatever is done to FURTHER THE INTEREST OF THE CLAY WORKER FURTHERS THE INTEREST OF THIS PUBLICATION.

Whatever prosperity the clay worker enjoys is shared by "Brick and Clay Record."

THE GREATER THE DEMAND FOR BRICK, THE MORE BRICK WILL BE MADE AND SOLD

and the greater the influence this publication will be.

The publishers of "Brick and Clay Record," knowing that a publication that will go into the hands of the buying public and which will boost brick to the exclusion of all materials, will be a benefit to the brickmaker and, in the long run, a benefit to this journal, proposes to take up the educational work outlined.

Plans to this end are being perfected. The first number probably will be issued in April.

"Ideal Homes" will be started as a sixteen-page periodical—about the size of such papers as the Saturday Evening Post, but eventually will be made much larger.

It will be printed on high grade paper and it will be profusely illustrated.

From the first or front page cover, which will bear each issue a special two-color full-page photograph of a beautiful BRICK home, to the last page in the magazine, there will be no other subject discussed or illustrated that does not have BRICK or BURNED CLAY as its inspiration.

There will be in each issue, photographs of modern BRICK homes, with the architect's full working plans and specifications for the same.

There will be special articles, profusely illustrated, relating to the interior of the BRICK home, and the possibilities of all varieties of burned clay will be shown.

Pleasing conceptions in art mantels, fireplaces, porches, doorways and garden walls will be shown by illustrations from actual BRICK construction.

"Ideal Homes" will not be simply a publicity scheme for the brick manufacturer—it will be a readable magazine which ANY man or woman would be pleased to subscribe for, because of its REAL merit and worth.

There will be no publication printed and devoted to the home that will be better than "Ideal Homes," and the only difference between it and its contemporaries will be that it will boost burned clay exclusively.

Don't you, as a brick manufacturer believe that "Ideal Homes" will be a most welcome aid to you as a business builder?

Think of 100,000 readers every month—and that is the circulation we are aiming at before the close of 1913.

Consider what this means to you as a manufacturer.

With one hundred thousand readers receiving the lessons of Burned Clay each month think what a great army of boosters you will have!

While we have impressed upon you the fact that "Ideal Homes" is going to be a most readable paper and one which ANY person may be desirous

of reading, do not overlook the fact that primarily it is intended as a **BOOST FOR CLAY PRODUCTS.**

The only motive that prompts its publication is the fact that it will be the greatest publicity feature possible for clay products.

Naturally this purpose will be **DISGUISED.**

The contents of the magazine will be so edited as to **KEEP THIS IDEA THE FARTHEST AWAY FROM THE READER,** and whatever is said about clay product will be in a **NATURAL** way.

The subscription price of "Ideal Homes" will be \$3 a year. Single copies will sell at 25 cents.

Getting a periodical on its feet is, usually, a herculean task. The first year of its existence—often-times the first two or three years—means a struggle for life.

To make "Ideal Homes" a success it must have a good beginning. There must not be any struggle for existence. There must not be any long fight for readers.

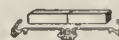
Our plan to avoid this uphill fight is a practical one and **TESTS THE SINCERITY** of the clay manufacturer who declares he **WANTS** to see his products given a boost.

We ask every clay worker in the country to become a campaigner for readers and, as a part of this plan, we are going to impose upon you this task:

Look carefully over your home locality. Pick out all **PROSPECTIVE** home builders you know of and make a list of them. In another list give the names of every man you know **SHOULD** be considering the erection of a home or the rebuilding of the one he now occupies.

Having checked over these lists for the purpose of making them as accurate as possible, mail them to us. That will **START** the ball rolling for "Ideal Homes."

Later, in these columns other announcements will be made of the proposed magazine because we know you **WANT** to be kept in touch with something that is of such vital interest to you.



WORK FOR BETTER CITY FIRE PROTECTION.

Illinois State Association Arranges to Visit all Towns with the Idea of Improving Conditions.

Illinois is waging a war for better fire protection. The state Fire Prevention Association believes first in "taking a stitch in time" and to that end urges all builders to use brick or some form of fire-proofing that answers the requirements of the Underwriters. Owners of buildings already erected are urged to render their properties as nearly fire-proof as possible. This is being done by inspections conducted in every city in Illinois.

The State association, under the new administration of President W. E. Vandeventer, already has accomplished much good, having made inspections of Elgin and Carbondale. This month inspection will be made of Kankakee and Murphysboro.



THE BLASTING OF CLAY.

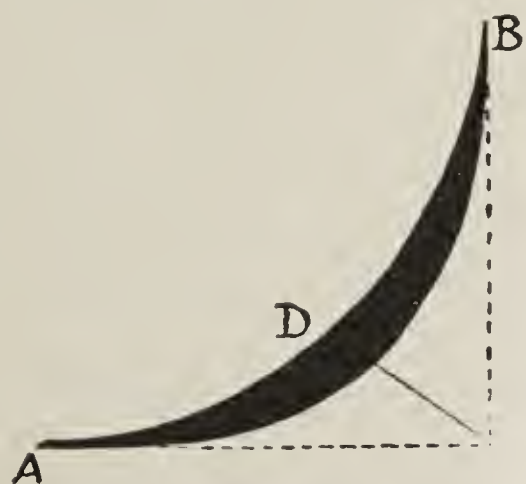
Novel Method Employed Causes a Landslide, Loosening Large Quantities of Clay.

A method of getting clay for brickmaking has recently been patented. The system is to start on a straight face of clay, and with a drill put in holes of about 1½ inch diameter, charge with blasting material, and fire them simultaneously in order to produce a landslide. The inventor of the system tells of it in the Brick and Pottery Journal as follows: "The chief point is to get the holes in at the bottom of the face, and to get them so far in and in such a direction that the foot of the cliff is practically undisturbed, and the only result shown immediately is a small crack on the top surface. A small amount of water is then allowed to run into the crack so made, and the result is that the foot of the cliff slowly pushes out, the top surface gradually sinking without falling over.

"In actual practice, I have used a small Ingersoll Sergeant rock drill, run by steam, which takes about 1½ horse-power, and puts holes in 14 feet with greatest of ease. I then charge the holes with compound black powder cartridges, only using 5 to 10 lbs. of powder per hole, and fire them by means of fuses all connected together, and fired by a sparking dynamo. The whole plant required only costs about \$300. The drill costs about \$250, and the sparking dynamo \$50. The material can then be loaded by hand or by an elevating steam grab, and requires very little labor. In my case I take steam from the grab boiler to drive the drill, and the grab worker does all the drilling and blasting. For an output of 300,000 brick per week, blasting is only necessary about once every month or six weeks, so that for about 100 lbs. of powder, 6,000 tons, more or less, of clay are secured.

"One great advantage of this system is that the clay grinds itself up by its own action, so that there are no big lumps, and it can be made into brick at once with great saving of power in the brick machines. The amount of clay which slides can be absolutely controlled by using more or less water in the cracks formed, and the steam grab can stand in the same place for a long time, as the clay goes to the machine instead of the machine going to the clay.

"After the landslide has been cleared up a face is left about this angle, and the material between D and C is then taken out again by the grab or by hand to straighten the face at the bottom in order to blast again. If, on the other hand, you wish to move to another place in your clay hole, the clay will not slip again unless you take out the piece from D. to C., as it seems to form



a natural angle. This invention saves all hand labor in the clay hole, and clay can be mined by this system at about half the price of loading in the ordinary way."

The inventor claims he can demonstrate a saving in his own case of at least \$2,500 per annum on a output of 10,000,000 brick.

QUESTIONS AND ANSWERS

Here, Knotty Problems That Confront Puzzled Readers of Brick and Clay Record, Are Unraveled by Experts

Brick Will Not Brown Red.

43. Missouri writes: "We are making a dry press brick from blue and brown shale, and are having a hard time to get them red enough for a good face brick. When we burned them with natural gas we did very well, but since we have used wood and coal, they burn to a yellow color, are good and solid but the color is bad. We burn in up-draft kilns 38 brick high and the 15 top courses come out light red and salmon colored. Those in the arches and paving bench are all right and hard burned. We would like to know if we can burn these brick in a continuous tunnel kiln, 300 ft. long, 12 ft. wide and 10 ft. high, with four rows of pot holes on top, chestnut coal to be burned, a fan to be used for draft. We do not care so much for making face brick as we do to get a hard brick. We can change to the stiff mud process and want a kiln which will burn them hard. If you do not think the continuous kiln is suitable for our shale, what kind of a kiln would you recommend? Do you think mixing clay with the shale would make the brick redder?"

Red color in clay wares is due to iron, and it should make no difference whether the burning is done with gas, wood or coal, provided proper conditions are maintained in the furnaces.

There are many clays and shales that contain lime, not necessarily lime pebbles but constituent lime which can only be detected by a chemical test. Now, a limey clay or shale may contain sufficient iron to give a red color when burned, but in the presence of lime, the iron combines with the lime, and the color of the burned ware may be buff instead of red. It may be possible to burn either pale red or buff, and if "Missouri's" clay or shale contains lime, the different color effect may be due to the firing. The iron cannot combine with the lime without being reduced. If in firing with gas he kept an oxidizing condition in the kiln, the product would have been red until a very high temperature was obtained when reduction would take place whether there was excess of air present or not.

In firing with wood or coal, he may get reducing conditions at much lower temperatures than with the gas, when the color turned to buff. The fact that he gets pale reds in the top of the updraft kiln is indicative of the presence of lime, if the lower brick are buff. Oxidizing conditions prevailed in the upper part of the kiln,

and the temperature was not high enough to reduce the iron and combine it with the lime, hence the brick had a red color.

If the shale is not limey, it may be that the discoloration is due to scumming, but this is so well known to brickmakers that it certainly would have been recognized. The top brick too would be as liable to scumming as in any other part of the kiln. If the trouble is scum it may be accounted for by the sulphur gas from the coal, which might cause the scum, whereas the natural gas would not give this trouble in so far as it might be due to the sulphur from the fuel. Dry press brick are not seriously troubled with scum and we do not think this can be the trouble. We, in this instance, are inclined to suspect lime.

He can undoubtedly burn the brick in a tunnel continuous kiln using nut coal for firing, and get an all hard product.

The continuous kiln will give a different color effect than the updrafts if the clay contains lime. It may give more red color but the chances are that the red will not be uniform.

Sulphur gas is accumulative in a continuous kiln and is converted into sulphuric acid in watersmoking sections of the kiln. The acid attacks the lime and converts it into sulphate. Sulphate of lime is not easily reduced and in consequence does not combine so readily with the iron, thus leaving the iron free to produce a red color. However, the practical result is not a uniform red, but a streaked red and buff, which is not as satisfactory as either the pale reds or the usual limey buffs.

The continuous kiln will use very little fuel and burn all hard brick, which makes it a satisfactory kiln for common brick, especially in districts where fuel is high.

We cannot tell what effect the clay would have upon the color—it all depends upon whether the clay alone burns a redder color than the shale.

Ellis Lovejoy.

Seeks Information on Glazes.

55, New York.—*What degrees of heat are required to melt the very softest glazes? Can I melt a soft glaze in a crucible and dip my ware without disastrous results and do you know of a case where it has been done? I am familiar with the brick business but "green" in regard to the use of glazes. Can you tell me of some good literature on the subject?*

The softest glaze is one of the raw lead type and matures at between 850° C. and 950° C., equal to 1,560° F. to 1,740° F. Glazes of this type are composed principally of either red lead or white lead with small amounts of whitening feldspar clay and flint.

In regard to dipping ware in the melted glaze in the

crucible will say that in so far as we know, this is not practicable, as the glaze can be applied to the ware in the form of paste and fused in the kiln. Dipping the ware in the fused glaze and cooling suddenly would cause crazing of the glaze and

probably cracking of the ware. If the ware were dipped in the fused glaze, then immediately set in an annealing oven there would be nothing gained over the present method of applying the glaze in paste form to the green or biscuit ware and maturing the glaze in the kiln.

There are a number of books giving so-called formulas for glazes. However, these would be of little use, because every different kind of clay or body requires a glaze which should be developed to fit that clay or body under the conditions under which it is burned. A glaze which will fit one body under one set of conditions would be very unlikely to fit a different body under a different set of conditions. There

are two books which might be of value, namely: "Clays, Glazes and Enamels," by Griffin, and "The Chemistry of Pottery," by Langenbeck. For technical men, the second volume of Seger and the Transactions of the American Ceramic Society are valuable.

TWO PROBLEMS IN BURNING.

Perhaps Some of Our Experienced Clay Manufacturers Can Answer These Inquiries.

The Old Trouble of Efflorescence.

Utah.—"I haven't had much experience in brickmaking but as our plant had never run successfully, I was determined last summer to see what I could do with it. 'Brick and Clay Record' helped me out a great deal. I had trouble with the first kiln cracking in the burning. I watched for the report of troubles of other clayworkers in 'Brick and Clay Record' and reached the conclusion from these that it was necessary to take a little more time in burning and to mix a little sand in my clay. We are now burning a good brick of a beautiful cream color, but still have a trouble that is injurious to sales. The lime comes out badly. When the brick are soaked in water it even comes through the plaster. Is there a way to prevent this? Is it apt to permanently injure the plaster?"

Color Varies in Burning.

Florida.—The burning of the brick constitutes my chief trouble. the same clay, apparently, does not produce the same brick in one "burn" as in another, although the conditions are kept as nearly the same as possible. The colors, in particular, vary a great deal. Can you suggest any way of overcoming the trouble?

PRIZE OFFER FOR BEST SUGGESTIONS

Beginning with the Feb. 1 issue of "Brick and Clay Record," three special prizes will be offered each issue for the best suggestions in the operating end of a clay plant.

FIRST PRIZE—For the best suggestion received each issue a prize of \$2 will be given.

SECOND PRIZE—For the next best suggestion received each issue a prize of \$1 will be given.

THIRD PRIZE—For the next best suggestion received each issue a prize of \$1 will be given.

There are no restrictions placed on the length of the articles, but it is suggested that not more than 200 words be written and that brevity will play almost as important a part in determining the merits of a suggestion, all other points being equal, as the suggestion itself.

Write on ONE side of the paper only and sign your name and address legibly.

Address:

PRIZE EDITOR,
Brick and Clay Record,
445 Plymouth Court, Chicago, Ill.



MAKING AND BURNING TILE.

Careful Selection and Preparation of Clays Essential for First Class Ware.

By Anton Vogt.

In paper read before the Iowa Brick and Tile Association, at its annual meeting at Des Moines, Jan. 22-23, Anton Vogt gave some practical suggestions on tilemaking and burning, based on his personal experience in the field for a long term of years. He suggests some remedies for troubles arising from various sources.



HAVING nothing to lose, but perhaps something to gain, not for myself, but for the betterment of faulty conditions that some of you may have encountered in the past and for which you are still seeking a remedy, I present some conclusions I have reached from practical experience. I feel, despite many years spent in working with clays, that I still know very little in comparison to that still unlearned, and in this I feel that I have plenty of company as there are many others in the same boat.

Of course we all know a class of clayworkers, who "know all about clays," and who can tell you, by rubbing, biting or spitting on a piece of clay just what it will make. As a matter of fact they don't know a thing about it. They are unable to tell what color it will burn and their dream usually has a sad awakening when the clay they pronounced "red burning" burns another color entirely.

The color depends much on the degree of heat to which the clay is subjected. At a heat ordinarily used for burning building brick, a clay may burn a fairly good red. Increase the heat and we develop a dark red or a gray and finally a blue or black as the heat increases.

Whenever a man tells you what a clay will make, judging from the raw state, it is best to be "from Missouri," and wait until the clay comes out of the kiln, for then and only then you can tell. You as well as I know that we can tell little about a clay before it has passed through fire.

We can only surmise what a clay would do by carefully observing its behavior in air drying, its shrinkage and even then we are not sure, the shrinkage may be all right and normal, but how about the tensile strength? You may say that most all clays of the common kind from which drain tile or common brick are made have plenty of tensile strength. Those of you who have been in the business for some time and probably in different localities know that there are some clays that are weak. They run all right through the machine and dry nicely, but when they are handled in moving to the kilns they chip easily when being loaded on the trucks and often the workmen are wrongfully blamed for injuring the ware when, as a matter of fact, the clay after drying was brittle and therefore chipped easily, indicating that its tensile strength was low.

The Manufacture of Drain Tile.

Many think that it takes a little better clay to make drain tile than brick. That all depends on the preparation of the clay. We all know that the housewife makes better

bread when she works the dough more. I proved to my own wife once that the manipulation of the dough had a good deal to do with the quality of the bread. When baking rye bread we always used caraway seed and on one occasion I found that the caraway seeds were all on one side of the loaf; that caused me to believe that my wife had not mixed the dough properly and I asked her about it. "Mix it yourself," she said, "you are stronger than I am." "All right, Mary," I said; and you should have seen the rye bread next time. The caraway seed were not on one side, nor the other—I forgot to put them in the dough. So my wife said: "You tend to your clay and kilns and I will tend to my bread and stove. Voila, Monsieur," which in English meant to tend to my own business, and I never since watched the mixing of the dough. Once I told her she had no combustion (meaning the stove), but she cut me off short and told me to look after my kilns. So there you are.

Manipulation of Iowa Clays.

Where shale is used for the manufacture of drain tile in the state of Iowa, you know what it means to strip the overburden, the earth on top of the shale, and in many places the task of removing the top soil is an expensive process. Why should it be removed?

For the tile making, this top soil could be utilized by proper handling.

Some of you will say, "Nonsense, that top stuff will crack all to pieces and it will whitewash badly." Very true, but we can preheat that top overburden to a certain degree and thereby stop all cracking. We can neutralize the alkalies by the addition of a certain percentage of carbonate of barytes and burn clean ware.

The time will come, and it is near at hand, when we will be obliged to salt-glaze our tile the same as sewer pipe, and in order to do it we must use clay free of alkalies or if it is present we must not belittle the ceramic chemists or laugh about their experiments; we must neutralize the cause of whitewash, burn our tile to a clean body, outside as well as inside, then we can fire-flash it easier and salt-glaze it.

It is useless for any one to try to glaze his tile unless he prepares the clay for that purpose as outlined above. There are some things in the making and burning of clay wares that the best of us can not remedy unless we remove the causes.

"You can help yourself by changing the conditions. If your clay cracks, pre-heat it. If it whitewashes, remove the cause. Use carbonate of barytes to neutralize the substance that causes the whitewash, as our chemists have been telling us.

"What salt is the best for glazing?" is frequently asked. Any kind of salt will do, if your clay is in condition to take a glaze. The dirty, over and over used packing house salt will produce as good a glaze as the more expensive granulated salt. The fine flavor and color of a roast do not depend on the kind of salt you use, but rather on the quality of the meat, and so it is with clay. The better the clay the better generally the glaze, and if the quality of the clay is not as good as required, we can

improve it by preparation, just as we can improve a tough steak by aging or freezing it, so clay can be improved by aging or weathering it.

Difficulties in Making Large Tile.

Some of you know that in making large tile sometimes considerable trouble is experienced in the drying and burning processes. The tile often show blisters, when taken out of the kilns, and all is blamed on the burner, which is wrong. These blisters I have frequently seen in the dry house before tile went into the kilns. Generally clays containing mica show these blisters because

the clay, where the mica is present, being slippery or greasy, does not unite and so blisters are formed at those places, and while burning they open up. Why, if this is not so, do not blisters show up at other places on the same tile? Because they were not there at the time of burning.

An extension on the tile press between the clay cylinder and the die allows the clay to travel further, giving it a chance to unite before issuing from the die greatly overcomes the blister trouble. Sometimes a 10 per cent addition of sand rock to the clay helps wonderfully.

WARNS OF SLICK YOUNG TRAVELING MAN.

Milton J. Williams Tells of Imposter Who is Seeking to Defraud Brickmakers and Machinery Men.

Milton J. Williams of the Chicago office of the Williams Patent Crusher Co., tells of a slick young traveling imposter who is making a business of trying to defraud brickmakers and brick machinery men throughout the country. So far the fellow has been unsuccessful, as far as can be learned, but his persistency indicates that he has found victims and that he will continue to practice his deceptions unless checked.

"Early last summer the fellow called me on the telephone and represented himself to be a son of Mr. Miller of the Fort Wayne Brick Co., of Ft. Wayne, Ind.," said Mr. Williams in talking of the imposter. "He said he wanted money enough to get home on, that he was broke, and wanted to come to my residence and have me cash a check. I was not in a position to cash checks that evening and asked him to call at my office the next morning, which he promised to do. He failed to show up, however.

"Late in August the same fellow called me up again on the telephone at my residence at 9 o'clock in the evening and represented himself to be a son of the Secretary of the Kier Fire Brick Co., of Pittsburgh. This time he wanted money enough to get back to Pittsburgh, as he was broke. I told him it was impossible to accommodate him, but if he would meet me at my office the next morning I would look into his case and stake him, if I found him to be all right.

"Having recognized his voice the second time I gave him a pretty good calling down over the telephone, and needless to say he did not come back.

"It seems that on Jan. 27 of this year this fellow turned up in St. Louis. He called upon Milton Mill of St. Louis and represented himself to be a nephew of A. B. Dana, president of the Chicago Fuse Co. He stated he was on his honeymoon and was robbed of all the money he had between Chicago and St. Louis. Mr. Mill gave him \$15 and is now looking for him, as he is convinced that the fellow was an imposter. This is undoubtedly the same man that tried to 'touch' me.

"This same fellow called at the residence of my father, Milton F. Williams in St. Louis, on the evening of Jan. 26, and stated that he was a good friend of my brother, Oliver Williams in San Francisco, and that his uncle, a Mr. Horton of Oakland, connected with the Remillard Brick Co., was using some of our machinery. He represented himself this time to be Harry W. Taylor, of Stewart A. Taylor Co., of Seattle, Wash., and mentioned that my brother Oliver had requested him to call upon my father while in St. Louis. He also mentioned that he was well acquainted with me in Chicago.

"His story this time was that he was on his way back from Niagara Falls with his bride and that this side of Indianapolis on the Big 4 road he got into conversation

with a passenger from New York, and after his companion got off the train at Terre Haute or some other town he found he was touched for \$210 in cash and draft for \$350. He wanted my father to give him money enough to get back to Seattle. His wife he said was then at the Planter's Hotel waiting for him to return. My father asked him to step to the telephone and either call his father in Seattle or send him a night letter, and told him he would guarantee payment of either. He further suggested for him to bring his bride out to his (my father's) residence and stay there until he got the money.

"This did not seem to please the fellow and before my father could call in the authorities he made for the front door and left. This is the last we have heard of Mr. 'Taylor.'"

The fellow is "spare build," rather a smooth talker, about 25 years of age and has black hair and black mustache.

WHO'S WHO IN THE CLAY WORLD



James A. Hogan.

James A. Hogan, the new secretary and treasurer of the S. S. Kimbell Brick Co., located in the Chamber of Commerce Building, Chicago, Ill., is a new recruit in the clayworking ranks. While new to the brick business, Mr. Hogan is a veteran in the building industry, and is well known to Chicago architects and contractors, having been president of the Illinois Stone Co., for twenty years. We welcome Mr. Hogan into our midst and from all accounts, we have won a strong ally and such additions to our ranks cannot but strengthen our bulwarks.



LAYING TILE TO GRADE.

Proper Grading and Laying of Tile Essential for Successful Drainage.

The tilemaker is frequently asked by his customers to give suggestions as to the best method of preparing the ditches and laying tile, and the following practical notes, by C. O. Nelson, a drainage engineer, which appeared in "Successful Farming," may be of some assistance in the matter.

"One of the essentials of successful tile drainage is proper grading of tile ditches. It is not a matter so difficult that there need be any doubt whether the tile are laid right or not and yet there is a great deal being lost because of poor work. Part of the trouble is due to ignorance and part of it to dishonesty and boozing.

"The first step toward accurate laying is leveling. This may be done by a professional surveyor or by any one else equipped with the necessary knowledge and instruments. It consists of finding the relative height of the ground at points all along the line of ditches. To do this accurately and conveniently the line is first staked out.

"This is usually done by commencing at the outlet and setting stakes every fifty or one hundred feet and numbering them consecutively. These are guide stakes and each of them is accompanied by a grade stake or 'hub' driven about level with the ground. The tops of these grade stakes are the points at which levels are taken and from which the depth of the ditch is measured. The surveyor or engineer should give the depth the ditch is to be at each of these points or stations. He can also give the amount of fall or the per cent of the grade which the tile is to have.

"A convenient form for writing out these depths and grades is as follows: First designating by name or number corresponding to that on the map if one is made, and giving the points where branches connect, etc.—thus:

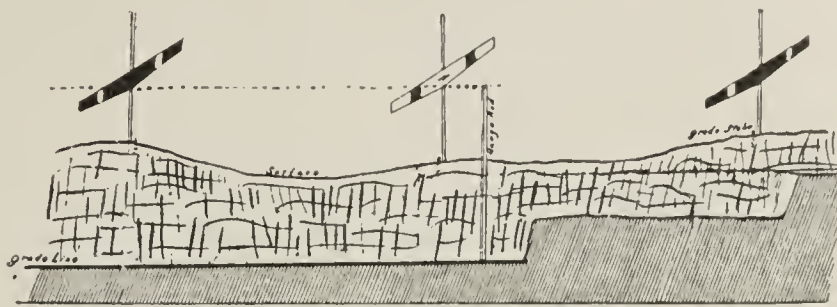
Station	Cut.	Grade.
0.....	3-ft. 0 -in.	.30 per cent
1.....	3-ft. 7 -in.	.30 per cent
2.....	3-ft. 6½-in.	.30 per cent
3.....	4-ft. 0 -in.	.30 per cent
4.....	4-ft. 5¾-in.	.30 per cent

"These figures are furnished the tiler and it is his duty to lay the tile to the depth indicated at each stake and with an even grade between stakes. To do this he should use one of the methods shown by the accompanying illustrations and directions.

The Target Method.

"To use the target method, set a target by the grade

stake at each end of the station to be dug. Subtract the depth of the cut for a given stake from the length of the gauge rod to get the height to which the target is to be set at that place. Having set the two targets at the stakes in this way, set the third one at from fifty to a hundred feet from the target you face while digging and in line with the other two. Then adjust the crossbar of



Showing Method of Grading Ditch by Targets.

it so that it is in line with the first two or so that the top edge just shows when sighted over them. Then test the depth of the ditch at any point by measuring with your rod from a line even with the tops of the crossbars.

"The line method is preferred by some tilers and for some conditions. The principle is the same as with targets. The use of what is called the 'side line' is described in 'Engineering for Land Drainage,' as follows: 'This consists of setting a line or wire directly over the grade stakes at a given distance above and parallel to the bottom of the proposed ditch. As the bottom is finished for the tile it is tested by means of a gauge which carries a light crossbar set at a right angle to it. The line is stretched parallel to the grade line of the ditch and five feet above it which is a convenient height, and tested by the gauge which is five feet long, from the bottom to the crossbar. The line should be supported at two or three points between stations to prevent sagging.

"To set the line, subtract the depth of the ditch at a given station from the length of the gauge to be used, and set the line above the grade stake and amount of this difference. Then the distance below the hub plus the distance above it to the line equals the length of the gauge.'

"The illustration shows the gauge rod in use with the targets. For wide ditches it is much better to have the targets or line over the center of the ditch, and the gauge is then used without the crossbar referred to above."

DRAIN TILE NOTES.

The Winnebago Tile Co., Winnebago, Minn., elected directors as follows: W. A. Streater, A. E. Quimby, George Karnish, B. F. McGregor, J. A. Reagan, A. A. Johnson, Fred Duncanson, J. L. Higgins, O. J. Clark. The directors elected these officers: President, W. A. Streater; vice-president, O. J. Clark; secretary, Fred Duncanson; treasurer, A. A. Johnson.

The Northern Tile Co., of Waterloo, Ia., has been incorporated with a capital stock of \$10,000.

The purpose of the organization is to manufacture drain tile.

NEW FREIGHT TARIFFS FILED

List of Rates That Effect Clay Product Shipments,
With Rates in Carloads and Per Hundred Pounds
and Dates Same Become Effective

The matter of freight rates is one of the most important items in the selling end of clay products. Recognizing this fact "Brick and Clay Record" has made arrangements with the General Traffic Association of Washington, D. C., to supply this journal with detailed information of the transactions before the Interstate Commerce Commission so far as they relate to the clay products industry.

In the first letter, presented herewith, it will be observed that a number of rates are suffixed with the letter "A" or "R" in parenthesis. The first indicates that such rates represent advances over former rates and the latter reductions.

(By Special Correspondence.)

WASHINGTON, D. C., Jan. 23.—Among the new tariff schedules filed with the Interstate Commerce Commission during the past week affecting the transportation of brick, clay and clay products, appeared the following changes in rates with the Commission, numbers, effective dates and rates in carloads, per hundred pounds, unless otherwise stated:

DELAWARE & HUDSON R. R., SUP. 14 TO I. C. C. 11142, FEB. 13, 1913.—Common brick from Saratoga Springs to New York, \$1.45 per net ton (reduction in rate), to points in lighterage limits of New York Harbor (if forwarded in lots of not less than six cars shipped at one time), \$1.85 per net ton. (R.)

DELAWARE, LACKAWANNA & WESTERN, I. C. C. 9132, FEB. 15.—Clay, crude or ground, and magnesite, from New York, Brooklyn and New York Harbor, to stations on B. & S. R. R. and B. & S. Ry., from Freeman, N. Y., to Junea, Pa., inclusive, to Codove to Sagamore, Pa., inclusive, to Stone Switch, Pa., to Springfield, inclusive, 12c 14c and 12c respectively on clay and 10c 12c and 10c on magnesite. From Hoboken City, Jersey City, N. Y. Lighterage Stations and Newark, N. J., to same points, 12c, 14c and 12c respectively on clay and 10c, 12c and 10c on magnesite. Also many other rates to New York and Pennsylvania points.

VANDALIA R. R., SUP. 17 TO I. C. C. 2588, FEB. 15.—Brick, clay and clay products, from Crawfordsville, Ind., to Atkinson, \$1.50 per net ton (R); to Aurora, Ill., \$1.10; to Bolivar, Ind., \$.85 (A); to Chillicothe, Ohio, \$1.40 (R); to Metcalf, Ill., \$.70 (A); to Owasso, Mich., \$1.65 (A); from East St. Louis to Claypool, \$1.65 (A); and other points; from Vincennes, Ind., to Aurora, Ind., \$1.35 (A); to Chapin, \$1.20 (R); to Chillicothe, Ill., \$1.55 (A); also from Brazil, Ind.; Brooklyn, Ind.; Collinsville, Ill.; Macks-ville, Ind.; St. Elmo, Ill.; St. Louis, Mo.; Terre Haute, Ind.; Troy, Ill., to various points in Illinois, Indiana, Ohio, Michigan, Wisconsin and Missouri. Above tariff contains many important changes and patrons interested in rates not shown above should secure original tariff from carrier.

PENNSYLVANIA R. R., SUP. 5 TO G. O. I. C. C. 3808, FEB. 15.—Brick, clay and clay products, from Kipples Sid-ing, Pa., to West Winfield, Pa., inclusive, to stations on Tionesta Valley R. R. as shown in G. O. I. C. C. 3800, Nos. 15,800 to 15,852, \$1.75 per net ton. (R)

BALTIMORE & OHIO R. R., I. C. C. 11268, FEB. 15.—Common brick, from Buckeystown and Frederick, Md., to Bluemont, Hamilton and Leesburg, Va., \$1.25, \$1.10 and \$1.10 respectively.

KANSAS CITY SOUTHERN, SUP. 1 TO I. C. C. 3175, FEB. 15.—Brick (all kinds, except bath, fire and enamel), including fire clay, straight or mixed and fire brick not to exceed one-third of gross weight of shipment may be included, from Oskaloosa, Mo., to Kansas City, Mo., 5c.

KANAWHA DISPATCH ROUTE, I. C. C. 930, FEB. 15.—Brick, from Cincinnati to Boston and Providence, 18½c; to New York all rail 18½c, rail and water 16½c; to Philadelphia a. r. 16½c, r. w. 15½c; to Baltimore a. r. and r. w. 15½c; Washington, D. C., Alexandria, Va., Charlestown, W. Va., Front Royal, Va., Hagerstown, Md., Riverton, Va., Shenandoah Junction W. Va., Petersburg, Va., Suffolk, Fredericksburg and Smithfield, Va., 15½c; from Louisville, Ky., to Boston and Providence 21c; to New York a. r. 21c, r. w. 19c; to Philadelphia a. r. 19c, r. w. 17c; to Baltimore a. r. 18c, r. w. 16c; to Washington, D. C., Charlestown, W. Va., Alexandria, Front Royal, Riverton, Va., Hagerstown, Md., and Shenandoah Junction W. Va., 18c; to Petersburg, Fredericksburg, Suffolk, and Smithfield, Va., 15½c.

ATLANTIC COAST LINE, I. C. C. A-2349, FEB. 18.—Fuller's earth, from Salters, S. C., to points in Illinois, Indiana, Georgia, Ohio, Pennsylvania, Kentucky, Mississippi, Florida, Tennessee and Alabama. The rate of \$5.00 per net ton is charged to New Orleans, La., Brookport (for beyond), and Cairo, Ill., Cincinnati, O., Covington, Ky., Evansville and Jeffersonville, Ind. (for beyond), Henderson, Hickman, Lexington, Louisville, Owensboro and Paducah, Ky.; \$5.25 to Chicago and Indianapolis; \$6.10 to St. Louis, Mo., and \$4.70 to New York.

C. H. & D. RY. SUP. 11 TO I. C. C. 2613, EFFECTIVE INTERSTATE FEB. 16, INTRASTATE JAN. 28.—Brick and clay from Bloomingdale, Hillsdale and Melcher, Ind., to points in Illinois, Indiana, Iowa, Ohio, Pennsylvania, Kentucky, Michigan, Missouri, New York and Wisconsin. The above is a very full tariff containing many changes—advances and reductions.

LAKE ERIE & WESTERN R. R., SUP. 11 TO I. C. C. 421-B, FEB. 15.—Brick from stations on Lake Erie & Western R. R., Ft. W. C. & L. R. R., N. O. R. R. to important points in Illinois, Indiana, Iowa, Kentucky, Missouri, New York, Michigan, Ohio, Ontario, Pennsylvania, West Virginia and Wisconsin. The above is a very important tariff, containing many changes—advances and reductions. Interested patrons should secure original tariff, by giving I. C. C. number, from issuing carrier.

WESTERN RAILWAY OF ALABAMA, I. C. C. 871, FEB. 17, INTRASTATE JAN. 25.—Common brick, from Selma, Ala., to Tyler 2¼c; Benton 2½c; Whitehall 2½c; Lownsboro, Robinsons, Burkeville, and Manack 3c; Cook's 3½; Tysonville, Milstead, Franklin and Notasulga, Ala., 4c; Cusseta 5c; and other Alabama points. Also to same points from Montgomery, Ala., to Tyler and Benton 3c; to Whitehall, Lownsboro and Robinsons 2½c; Burkeville and Manack 2¼c; to Cook's 2¼c; to Tysonville 2½c; Milstead and Franklin 3c; Cusseta 4c. Also from Ophelia, to same points 4½c, 4c, 4c, 4c, 4c, 4c, 4c, 3½, 3½, 3c, 3c, 2½c respectively. Also from West Point, Ga., to same points, 5c, 4½c, 4½c, 4½c, 4½c, 4½c, 4c, 4c, 3½c, 3½, 2¼c. The rate between West Point and Montgomery is 4c.

MICHIGAN CENTRAL, I. C. C. 4291, FEB. 16.—Brick, clay, tile, etc., from Michigan Central R. R. stations, also from B. & S. Ry., D. L. & W. R. R., Erie R. R., Lehigh Valley, N. Y. C. & H. R. and Toledo Terminal R. R. to points in Illinois, Indiana, Iowa, Kentucky, Michigan, Missouri, New York, Ohio, Ontario, Pennsylvania and West Virginia. This is an important tariff containing numerous changes—advances and reductions.

BALTIMORE & OHIO R. R., I. C. C. 11271, FEB. 15.—Brick from Cambridge, Columbus, Fair Oaks, Gables, Junc-

tion City, Marietta, Newark, Shawnee, Summit, Taylor and Zanesville, Ohio, to points in states of Illinois, Indiana, Iowa, Kentucky, Michigan, Missouri, New York, Ohio, Pennsylvania and West Virginia. This tariff is very full and contains important changes—both reductions and advances.

Also Sup. 1 to B. & O., I. C. C. 11129—Brick from Defiance to Gerald, Naomi and Wauseon, Ohio, 55c.

NEW YORK CENTRAL & HUDSON, I. C. C. B-18365, FEB. 20.—Brick, building, chimney, common, fire, hollow building, paving, pressed, salt glazed (not enameled when shipped the same as pressed brick), hollow building blocks, clay and clay products and tile, from Becch Creek, Bigler, Clearfield, Clymer, Lock Haven, Mahaffy, Monument, Patton, Woodland and other nearby Pennsylvania stations to Clintondale, East Walden, Loyd and Mowbray, N. Y., \$2.30; to Acram, Bangall, Billings, Brinkerhoff, Elizaville, Salt Point, Moore's Mills, Stauforville, and other New York points, Canton, Chopinville, Clarksville, Norfolk, New Hartford, and other Connecticut points and Feeding Mills, Mass., \$2.70.

EUGENE MORRIS, AGENT'S, I. C. C. 386, AND F. A. LELAND, AGENT'S, I. C. C. 969 (combined), FEB. 20.—Brick, clay and clay products between Carolina territory, Chicago territory, Cincinnati territory, Dayton-South Bend territory, Detroit-Cleveland territory, Louisville territory, Macon territory, Memphis territory, Middlesboro territory, Nashville territory, Peoria territory, Pittsburgh territory, Raleigh territory, St. Louis territory, also Atlantic Coast port cities, Virginia cities, to points in Oklahoma, Arkansas and Tennessee. This is a very voluminous tariff and should be consulted.

ENGINE MORRIS, AGENT'S, SUP. 4 TO I. C. C. 126 E, FEB. 15.—Names a number of important rates on brick, clay, conduits and shale from stations in Ohio, Illinois, Indiana, Pennsylvania, Kentucky, Missouri and West Virginia, to points in Minnesota, Michigan, Wisconsin, Missouri, Kansas, Iowa, Nebraska. This is a special tariff on these commodities and contains a number of changes.

NOTE—"R" denotes reduction and "A" denotes advance.

NEW MACHINE MEETS WITH FAVOR.

The new special premier machine now put out by The J. D. Fate Co. is meeting with a great deal of favor among the clay working plants of the country, as it seems to be meeting the requirements in a good many peculiar conditions, where capacity and quality of ware have not been secured to an extent to make the business profitable. It is reported to be a high grade machine, built substantially in order to meet the most exacting requirements.

At Brazil, Indiana, the largest hollow ware point in this country, five of these machines have been sold during the last few months. The Clay Products Co. has bought two of them for the manufacture of electrical conduits, Denison tile and hollow blocks. The McRoy Clay Works, one of the National Fire Proofing Company's plants, has bought two of them for the manufacture of electrical conduits, silo and other hollow blocks. The Brazil Hollow Brick & Tile Co., also has bought one for the manufacture of the same ware.

Other recent purchasers of this same type of machine are: The Denison Clay Co., Coffeyville, Kas.; The Suburban Brick Co., Wheeling, W. Va.; C. H. Kline Brick Co., Chaska, Minn.; The Alberta Clay Products Co., Medicine Hat, Alberta, Can.; The Ohio Clay Co., Cleveland, Ohio; The Bloomington Pressed Brick Co., Bloomington, Ill.; The Fort Wayne Brick Co., Fort Wayne,

Ind.; Hockers Bros., DuPere, Wis.; The Rossford Brick & Tile Co., Rossford, Ohio; The Acme Roofing Tile Co., Des Moines, Iowa; The Valley City Brick & Tile Co., Valley City, N. D.; The Weyburn Brick Co., Weyburn, Sask.; The Acme Brick, Tile & Lumber Co., Selkirk, Man.; The Barr Clay Products Co., Wanamingo, Minn., and The Bradford Fireproofing Co., Bradford, Penn.

DENISON LICENSEES TO HOLD MEETING.

Manufacturers of This Type of Hollow Tile Plan to Perfect Organization at Clay Show.

All the licensed manufacturers of the Denison interlocking tile, nearly thirty in number, will meet in Chicago on March 5 during the progress of the Clay Show. It will be the first annual convention of an organization that was determined upon last year during the Clay Show and the session will be held in the offices of the Clay Products Co., 909 Stock Exchange Building.

According to a circular sent out to the licensees by Frank W. Darling, the secretary, the objects of the meeting are:

"To perfect a closer and mutually helpful organization among Denison Tile Licensees.

"To determine upon some method of universal advertising of Denison Tile in widely distributing periodicals and indexes.

"To discuss questions of interest to all."

The program follows:

General Advertising.....W. B. Fraser, Dallas, Texas.
Salesman's Talking Points..B. J. Graham, Cleveland, O.
Economical Handling in Manufacture.....
.....Mr. Eastman, Tacoma, Washington.
Recognition Under City Codes.....
.....W. C. Denison, Cleveland, O.
Reports on Successful Strength and Insulation Tests.....
.....Mr. Hatton, St. Louis, Mo.
Building Progress and Outlook in Different Sections
of the Country.....H. H. Stafford, Augusta, Ga.

The Denison Tile licensees are: Far West Clay Company, Tacoma, Wash.; Western Clay Mfg. Company, Helena, Mont.; Delaware Clay Company, Delaware, Ohio; Great Eastern Clay Product Co., 175 Fifth Ave., New York; R. W. Lyle, 39 Cortlandt Street, New York City; Suburban Brick Co., Wheeling, W. Va.; Denison Clay Co., Coffeyville, Kan.; Laclede-Christy Clay Products Co., St. Louis, Mo.; Alberta Clay Products Co., Medicine Hat, Alberta, Can.; Lewis Minor, Birmingham, Ala.; American Fire Brick Co., Spokane, Wash.; Ohio Clay Company, Cleveland, Ohio; The Clay Product Company, Stock Exchange Bldg., Chicago; Fraser Brick Company, Dallas, Texas; Farmers & Planters Co., Salisbury, Md.; Los Angeles Pressed Brick Co., Los Angeles, Calif.; The Warner-Miller Co., New Haven, Conn.; Georgia-Carolina Brick Co., Augusta, Ga.; George F. Sansbury, Cumberland, Md.; Johnstown Face Brick Co., Johnstown, Pa.; Lee B. Humphrey, Humphrey Brick & Tile Co., Brookville, Pa.; Center Brick & Clay Co., Orviston, Pa.; Goodwin Tile & Brick Co., Des Moines, Iowa; North Iowa Brick & Tile Co., Mason City, Iowa; Silicate Engineering Co., of Canada, Ltd., Montreal, Can.; Edwards Mfg. Co., Cincinnati, Ohio; C. H. Carpenter, Hamilton, Ontario.

A postal card addressed to the American Blower Co., Detroit, Mich., will bring you a set of bulletins and booklets, recently published, describing the various equipment manufactured by that company, including steam traps and heaters and blowers of various types.

SPORTS OF THE WEEK

Edited by
M. J. WILLIAMS

SCENES IN THE TRAINING CAMPS OF THE COMBATANTS



FATE AGREES TO BOX HOSKINS AGAIN

Plymouth Whirlwind Concedes All Demands and Promises to Weigh in at 133 Pounds Three Hours Before the Fight

A return match between "Kid" Hoskins, otherwise known as James Marquise Hoskins, the Terre Haute Thunderbolt, and "Knockout" Fate, better known as Harley, the Plymouth Whirlwind, has been arranged for the week of the Clay Show and Convention.

The six-round bout between these two which was held last year during the Clay Show week, proved very unsatisfactory. Fate got the decision but Hoskins insists that his opponent was not only overweight but used un-



Milton J. Williams.

professional tactics which the referee failed to see on account of Fate's torso.

Following months of negotiations by Hoskins and his manager, A. W. Aylesworth, during which time the match was made more than once only to be cancelled on some slight hitch over the articles of agreement, Fate has decided to grant a return match.

Both Men Are Active Hard Workers, and Also Declare Themselves to Be Rounding Into Fine Shape Rapidly

Hoskins, however, insists that Fate shall weigh in at 133 pounds at 3 o'clock on the afternoon of the bout. Inasmuch as Fate entered the ring-side last year at 290 pounds ringside it can be seen that he is giving away considerable avoirdupois weight. He insists, nevertheless, that he can make the weight demanded of him and still be strong.

Hoskins seems to have made a good match as 133, three hours before the fight will be easy for him. He weighed in at 125 ringside last year and figures on building himself up a few pounds.

Hitting in clinches is to be barred as will be the kidney punch. The contestants will be allowed a reasonable amount of tape on their hands and

JUD'S SNAPPY COMMENT ON CURRENT SPORTING NEWS

sixteen ounce gloves will be used. Otherwise, straight Marquis of Queensberry rules will prevail.

News from Tate's training camp near Plymouth, Ohio, proves that he is getting himself into condition rapidly. He is taking road work over the hills in the vicinity of his camp, running 110 miles every morning before breakfast. He boxes six fast rounds every morning but is finding trouble getting sparring partners who stand the grilling work he forces on them.

Fate has been in active training for two weeks and has been getting gradually down to weight. His first few days' workout was rather discouraging to him, however, as, after putting on his usual routine stunts he stepped on the scales and found that the beam tipped at 342 pounds, which was a gain of 32 pounds as he weighed 312 when he started training.

Fate immediately added shadow boxing to his daily work, increased the roadwork and putting on a few more sparring partners. He also decided to go on a rigid diet and from now on until after the bout he will refrain from eating, although his manager says he can have an occasional nibble of bologna. As a result of this change in his training plans Fate is fast losing his celebrated torso and declares that never again will Hoskins be able to kid him in the ring as he did on the previous meeting of these two.

From Kid Hoskins' camp at Terre Haute we hear the most flattering reports of his condition. Hoskins takes daily sprints to Indianapolis and back, with a good rub down on his return, and a rest for an hour or so. He then spars six or eight rounds with his sparring partners and strange to relate Hoskins is taking on weight and developing his muscle rapidly. Hoskins believes the added weight will be of assistance to him and writes that he will be in the pink of condition.

With such promising reports from both camps we are inclined to believe that this will be one of the most interesting fights pulled off in these parts in recent years. There can be no cry of lack of condition, overtraining, conceded weight or doping in this bout for both contestants are training with the utmost care and are carefully watched by a staff of ex-

FACTS ABOUT BIG MATCH FOR CLAY SHOW WEEK.

PRINCIPALS—"Knockout" Fate, the Plymouth Whirlwind, and "Kid" Hoskins, the Terre Haute Thunderbolt.

WEIGHT—One hundred and thirty-three pounds three hours before the bout.

REFEREE—Milton I. Williams, "Brick and Clay Record's" famous sporting writer.

TIME AND PLACE—On the evening of March 5 at the Smoker given by the Ancient Order of Chaldeans in their hall at the Congress Hotel.

perts. This in our opinion will be the "candy" engagement of the age, and the N. B. M. A. and the Clay Show officials may well congratulate themselves on the coming event, for it will draw thousands of clay men who will come to Chicago to witness this event.

Arrangements have been made with Mayor Harrison and a special dispensation granted so nothing remains now but the arranging of minor details, selection of seconds, referee, timer, and the match itself.

The bout will be pulled off at the smoker given by the "Ancient Order of Chaldeans," on the evening of March 5 in the Lodge Rooms at the Auditorium Hotel.

SPORTING SIDELIGHTS

In speaking of his approaching bout with "Knockout" Fate "Kid" Hoskins says the job is nothing new to him as he has been "Fighting Fate" all his life.

A number of entries have been received for the marathon, those so far signifying their intention to enter this big event are: Eben Rogers, A. W. Aylesworth; F. J. Helwig, Fred Talbott, Frank Butterworth, Thomas Harwood, L. W. Flood, L. E. Rodgers and Claude E. Fuller.

A ping pong match is being arranged between Bill Durbin, the Hoosier Firefly, and Charlie Carpenter, the Wheeling Wonder.

The beef trust handicap, a three-mile sprint on a cinder track, with a keg of Schlitz for the prize, will be one of the truly great sporting events of the Show week. Those entered are: Harley Fate, John Moroney, H. J. Heafield, Walter Reece, Charles Woodward, Charles Bray and William Hammersmith.

A. M. McClammrock of the Wallace Mfg. Co., and James E. Whiteselle of the Whiteselle Brick and Lumber Co., of Corsicana, Texas, are going to match their speed stables for two events in the harness races.

In the bowling contest the sports committee has arranged a match between Phil Goldrich of Saugerties, N. Y., and F. R. Minton of Mexico, Mo. The Congress Hotel bar will be excluded and nothing but their regulation ball will be permitted—all others, such as high balls, etc., being barred absolutely.

The kiln fellows are going to have an interesting contest. They expect to see who can burn a \$10 bill the quickest. Those entered are: C. B. Platt, John Boss, K. W. Klose, A. J. Kautz, W. P. Grath, Alfred Yates, L. Haigh and F. W. Dennis. Other entries are expected.

Fred Adams of Indianapolis and Henry Kleymeyer of Evansville will compete for the National golf championship, the links in the Pompeian room being the site chosen for the play.

The following light-slippered gents will enter into a Turkey Trot endurance match: Rogers Combs, Charles Burridge, D. C. Haeger, E. L. Hess, I. M. Justice and J. O. Trautwein.

Join
the
Ancient
Order
of Chaldeans

Room 1128 Congress Hotel



Conditions from the Atlantic to the Pacific as Reported by Our Expert Observers— Market Fluctuations and Industrial Prospects

NEWS OF THE CLAY WORLD.

The Taylor-Wharton Iron & Steel Co., High Bridge, N. J., has moved its western sales office from 203 Mills Bldg., San Francisco, Cal., to 504 Newhouse Bldg., Salt Lake City, Utah.

E. F. Knight, formerly sales manager of the Bradford Pressed Brick Co., will hereafter be identified with the Buffalo Builders Supply Co., Ellicott Square, Buffalo, N. Y., as manager of its clay product department. The Buffalo Builders Supply Co. represents a fine line of enamel brick, tile, ornamental terra cotta, etc. It has recently added a line of "Tapestry" and "Caledonian" brick made by Fiske & Co., Boston and New York.

It has been announced that the San Angelo brick plant, San Angelo, Tex., will resume operations March 1, after a shutdown of several months' duration. The officers of the company are looking for a big revival of building activities this spring.

Mr. E. E. McCoy, who has been with the Keystone National Bank of Pittsburgh, Pa., since 1898, and assistant cashier since 1902, recently resigned to become secretary and treasurer of the newly formed \$1,000,000 corporation, the Hay-Walker Brick Co., of Pittsburgh, which takes over the building brick department of the Harbison-Walker Refractories Co. The officers, in addition to Mr. McCoy, are: Hay Walker, president; C. J. Henderson, Eastern sales manager. The board of directors consists of H. W. Croft, president Harbison-Walker Co.; Hamilton Stewart, secretary Harbison-Walker Co.; W. B. Rhodes, J. F. Byers, Mr. Walker and Mr. McCoy. Improvements to the plant are being made which will give a daily capacity of 135,000 brick.

A Builders' Exchange, with a membership of more than sixty, has been organized at Roanoke, Va., with R. A. Figgatt, president. The exchange, which is composed of leading architects, contractors and material men, occupies a 3-story building, the first floor being devoted to exhibits of all kinds of building materials.

A. J. Kautz of Chicago, has gone to Elgin, Texas, to take charge of the Elgin Butler Brick Co.'s plant as superintendent.

"How You Can Save Your Share of \$2,000,000 Waste" is the title of a handsome little booklet just issued by R. & S. Belting Co., of Cleveland, Ohio. The pamphlet bristles with interesting facts about belts and their uses and misuses. A strong appeal is made for the belt specialists and some inside information about the manufacture of belting is poignantly told.

The Majestic Furnace and Foundry Co., of Huntington, Ind., has issued the 1913 catalogue of the Majestic Coal Chute and is sending it to all interested. The Majestic Chute is designed to be placed in the foundation wall for depositing coal and wood. This chute is largely used by brick plants and is a great source of economy.

By an inadvertent error mention of the part that the Dodge Mfg. Co., of Mishawaka, Ind., had in the equipment of the model brick plant of the Albion Shale Brick Co., of Albion, Ill., which was described in the Feb. 1 issue of "Brick and Clay Record," was omitted. The Dodge Company installed all the transmission machinery.

Many improvements are being made on the Harbison-Walker Co.'s plant at Kittanning, Pa.

The Laclede-Christy Clay Products Co., at St. Louis, Mo., held its annual meeting, and the following officers

were elected: James Green, president; John L. Green, vice-president and general manager; Richard D. Hatton, vice-president; Montague Lyon, secretary; W. J. Westphalen, treasurer; Richard D. Hatton, assistant secretary and treasurer.

The Hydraulic Press Brick Co., at St. Louis, Mo., re-elected the officers and directors of last year.

Edward H. Snyder, of Hanover, Pa., who for many years was actively engaged in the brick business in that town passed away after an illness from pneumonia.

M. D. Carr, superintendent of the Harbison-Walker brick plant at Mt. Vernon, Pa., will hereafter manage the company's plant at Chester as well as the one at Mt. Vernon.

The Robinson Clay Products Co., near Ulrichsville, Ohio, is making negotiations with John Krantz of Strasburg for the purchase of his farm of 124 acres near Strasburg, which contains valuable deposits of fire clay. The consideration is \$10,000.

A number of clay experts from several cities are visiting Freeport, Texas, investigating the clay deposits in the surrounding territory with the view of establishing a large brick or tile plant should the clay come up to expectations.

The V. V. V. Brick & Tile Co., located southwest from Buffville, Kas., is equipping its kilns with combination gas and coal burners.

The American Fire Brick Co., at Mica, Wash., has greatly increased the capacity of its plant by the addition of a half mile of railroad tracks and six cars and by installing a new tile cutting machine. The latter addition is for making Denison tile, the company having the exclusive rights for the manufacture of this tile in that section. "The improvement we are making," said C. P. Oudin, manager of the company, "will increase the efficiency of our plant to a high degree, and will also increase the output about thirty per cent. The fire brick business is coming along nicely and is showing lively activity."

The New Mexico Fire Brick Co., at Sante Fe, N. Mex., is making rapid progress on its building and the well which is being sunk. Orders for its products are already being received, one of large size, being from the United Verde Co., at Jerome, Ariz.

The Laclede-Christy Clay Products Co., at St. Louis, Mo., announces the closing of a deal by which it secures 300 acres of coal lands in northeast Missouri, overlying a rich vein of fire clay.

The construction of the plant of the San Diego Vitrified Brick & Clay Products Co., at San Diego, Cal., is well under way.

The new plant of the Terra Cotta Tile Co., of Ottawa, Ill., is now in operation. Decorative tile will be made.

The J. B. Owens Floor & Wall Tile Co., of Zanesville, O., is working on a large order for special panels to be used in the Children's Ward of a large hospital. The subject of the panels is taken from the story entitled, "The Land of Nod."

The following machinery representatives were at the annual convention of the Wisconsin Clay Manufacturers Association at Milwaukee, Jan. 29-31: L. Haigh and H. S. Simpson of the American Clay Machinery Co., G. S. Brubaker of H. Brewer & Co., Frank G. Bolles of the Bucyrus Co., E. G. Biechler of the Chambers Bros. Co., G. J. Blanton of the General Electric Co., William M. Taylor of the Main Belting Co.

The American Building Brick Co., 3639 W. 56th St., Cleveland, O., is increasing the capacity of its plant from

60,000 to 100,000 daily. This company has discarded all its old transmission and brick machinery and replaced same with the following equipment: Three "Duke of Wellington" brick machines, three combination disintegrators and crushers, three clay granulators, one sand crusher and sifter, all manufactured by The Wellington Machine Co., Wellington, Ohio. All shafting and oil ring and dust proof bearings and pulleys were furnished by the Hill Clutch Co., of Cleveland. Two 75-h. p. and 150-h. p. clutch couplings were of The Cleveland Clutch Co.'s make. All belting for the entire equipment of the plant will be "Nestor," manufactured by The American Fabric Belting Co. The additional dryer is of the low pressure vacuum type, the same as the one installed by The American Clay Machinery Co., two years ago, which the company says has given splendid results.

The American Building Brick Co. had a very prosperous season in 1912 and says the outlook for 1913 is very promising.

Ellis D. Gates, a graduate of the Ceramic School of the Ohio State University, and well known in terra cotta circles, has opened an office at 103 North Water St., Mobile, Ala., for the handling of building supplies and specialties.

The demand in Salt Lake City, Utah, and vicinity, for J-M asbestos roofing, shingles, pipe coverings, and other building materials manufactured by the H. W. Johns-Manville Co., has increased to such an appreciable extent, that this company has found it expedient to open a branch office in the Dooly Block, in that city.

The school board of Palmer, Iowa, recently advertised for bids on rebuilding a school house, the concrete walls of same to be removed and replaced with brick or frame. The original cost of the building was \$6,000.

M. M. Favor, Gardner, Mass., has purchased the brick yard on West Broadway, formerly owned by Alex. Caron. Mr. Favor will handle the brick plant in connection with his building material business.

The Arkansas Brick & Mfg. Co., of Little Rock, Ark., is taking advantage of the parcel post service in the sending of sample brick, the cost averaging about 30 cents for two brick.

As palliation for breaking the Sunday labor law, B. T. Scott, an officer of the Tidewater Portland Cement Co., Frederick, Md., said that so far the plant had not paid a profit on the investment of \$2,250,000, and that Sunday work was necessary in order that the plant might turn out 1,250,000 barrels, its annual capacity. The forty-one employees were fined \$5 each as the defense failed to prove that Sunday work was necessary.

The Eastern sales office of the Davenport Locomotive Works has been moved from No. 30 Church St., New York City, to Room 2052 Grand Central Terminal Bldg., N. Y.

The branch office managers and selling engineers of the American Blower Co. met in annual convention at the Hotel Pontchartrain, Detroit, January 23rd, 24th, and 25th. Enthusiasm with regard to the business of the past year as well as prospects for the future was evident throughout all of the sessions. Questions relating to engineering, salesmanship, administration, works-management and production were discussed at considerable length.

A gas well recently drilled for the American Building Brick Co., 3639 W. 56th St., Cleveland, O., has a capacity of 2,000,000 feet a day. This strengthens the conviction that a gas field of considerable proportions underlies Cleveland and vicinity.

At the annual meeting of the stockholders of the Brazil Clay Co., Brazil, Ind., plans were made to increase the capacity of its plant. The increasing demand for fine, vitrified building brick made necessary some changes in the plant.

The following directors and officers were elected: William Zeller, president; J. H. McClelland, vice-president; and W. J. Snyder, secretary-treasurer.

S. C. Mellor has leased the Liberal Brick & Tile Co.'s plant at Liberal, Mo., and will operate it under the name of the S. C. Mellor Brick Co.

We are informed that W. O. Bryan of Cripple Creek, Col., is investigating the clays near Joplin, Mo., with a view of establishing a pottery plant.

The newly organized Hampshire Brick Co., Holyoke, Mass., has purchased the Landers brick plant and other valuable real estate holdings of Dennis Landers in South Hadley Falls.

The new company comprises Joseph F. Ranger, William E. Ranger, James A. Ranger and John F. Lynch. It is the plan of the incorporators to include brick making with its construction work. The new company is incorporated at \$25,000.

Broyles & Son, of Chuckey, Tenn., are contemplating the establishment of a brick plant at that place this spring.

NEW PLANTS AND IMPROVEMENTS.

The Domestic Brick & Tile Co., Montreal, Can., will erect a plant with an initial capacity of 130,000 brick a day near Laprairie, Can. It is understood that the plans call for equipment of the most modern type including a continuous kiln and up-to-date handling devices.

The Acme Brick Co., which operates a plant six miles west of Edmonton, Alberta, Canada, will spend \$250,000 on additions and improvements, increasing its output from 75,000 to 250,000 a day.

The South Carolina Clay Co., at Camden, N. J., has been incorporated with a capital of \$100,000, to deal in clay, etc. The incorporators are J. F. Sutton, K. L. Frasier and T. H. Rowland, all of Camden.

The Ionia Pottery Co. is a new concern recently incorporated in Ionia, Mich., with a capitalization of \$50,000. The incorporators, all of the same city, are: Fred Cutler, Jr., H. E. Kidder, Henry Witzel, M. L. Barnes and R. A. Hawley.

The Sanitary Fireproof Asbestos Co., at Cleveland, Ohio, has been incorporated with a capital of \$50,000.

The Central Mantel & Tile Co., at Detroit, Mich., has been incorporated with a capital of \$3,000. The incorporators are: A. M. Bauman, B. F. Metcalf and Mary A. Allen.

The Brownsville Shale Brick Co., with a capital stock of \$50,000, is being organized by Indiana capitalists and its plant will be located at Brownsville, Ill. Paving brick will be the specialty of this company. It is expected that the plant will be placed in operation before the end of the year.

The Spencer Mountain Stone & Brick Co., at Charlotte, N. C., has been incorporated with a capital of \$100,000. The incorporators are: F. S. Tucker, E. C. Marshall, N. A. Cooke.

The Los Angeles Pressed Brick Co., at Riverside, Cal., is considering the erection of a plant at the clay banks at Alberhill.

The Redding Brick & Tile Co., at Redding, Cal., has purchased the right, title and interest in the Redding Lime & Brick Co.

W. J. Homer, of Musselshell, Mont., is in the market for press brick machinery, sewer pipe and tile machinery, kilns and kiln accessories.

The American Terra Cotta & Ceramic Co., Chicago, Ill., has increased its capital stock from \$500,000 to \$700,000.

L. C. Wick, of Butler, Pa., will build an up-to-date brick plant and wants catalogues and prices on brick machinery and kilns.

The Corsicana (Tex.) Brick Co., will add new improvements amounting to \$8,000.

Albert A. Wensel, Woodrun Ave., near Brighton Road, Pittsburgh, Pa., has purchased the plant of the Miller Brick & Stone Co., which, after being thoroughly overhauled and repaired, will be placed in operation and run to its full capacity.

The Ready Brick Co., at Richmond, Va., has been incorporated. The officers of the new company are: J. Ready, president; I. Bain, vice-president; A. A. Saunders, secretary and treasurer, all of Richmond.

The Rochester Sand & Brick Co., at Rochester, Mich., has been incorporated with a capitalization of \$50,000.

The Northern Tile Co., at Waterloo, Iowa, has been incorporated with a capital stock of \$10,000.

William A. Leopold, Samuel H. Horvitz, and Howard C. Walton have incorporated under the name of the Palmyra Silcate Slate Co., at Camden, N. J., with a capital of \$125,000. They will manufacture and deal in sand, lime, brick and other kindred products.

The Seymour-Hurst Brick Co., at Benton, Ill., has been incorporated to manufacture and deal in fire and building brick, sewer pipe, tile etc. The incorporators are: J. M. Seymour, J. E. Hurst and C. H. Miller.

The Caldwell Improved Building Tile Co., at Salt Lake City, Utah, has been incorporated with a capital of \$25,000. The officers are: A. D. Snarr, president; J. V. Caldwell, vice-president; C. H. Lyon, secretary, and W. H. Lyon, treasurer.

The Coleman Vitriified Brick Co., at Coleman, Texas, is preparing to add to its plant, six additional round down draft kilns. These improvements will cost \$10,000, and when they are finished the plant will have a capacity of 40,000 to 60,000 brick per day.

The Denton Pressed Brick Co., at Denton, Texas, intends making improvements to its plant that will more than double its present capacity. The additions include ten new kilns, two big presses, a new engine, a new drying room, 150x600 feet, with a capacity of 4,000,000 brick. The company intends to purchase twenty-eight acres of land adjoining the factory site.

The Pittsburg Fire Brick Co., of Pittsburg, Pa., was recently incorporated with a capital of \$25,000.

KENTUCKY.

Louisville, Ky., Feb. 10.—The clay-workers of Louisville and vicinity have little new work with which to concern themselves at present, but they have plenty of contracts which were undertaken about the first of the year and their attitude is largely one of optimism.

The prospect confronting brick and tile manufacturers in the Bluegrass are very encouraging. The brick-work upon the Starks building, a fifteen-story structure, is to be done during the next three months, immediately following a let up in the weather. The home offices, eleven stories tall, of the Great Southern Fire Insurance Company at Fifth avenue and Walnut street, are to be completed. The National Theater at Fifth avenue and Walnut street is to be erected, and plans for a mammoth amusement house to be called the Jefferson, on Jefferson street near Fourth avenue, have been proposed by the representatives of the Levi-Tyler estate. Sometime in the near future the work of erecting the 25-story home office building of the Southern National Life Insurance Company at Fourth avenue and Market street is to be undertaken.

In brick contracting circles in Louisville there is talk of a revival of the plan to organize a company of contractors to purchase the two remaining yards of the Hydraulic Brick Company, a big concern which went out of business last July upon the decision of its stockholders to liquidate as soon as possible. Despite the extensive development of the city's clay-working interests during the past year, doubt is entertained in the structural trades as to the capability of the city's present resources to take care of normal demand for brick and other clay products. Last year, providing a building boom hitherto unequalled in the history of the metropolis, was marked by a most undesirable brick famine, when three of the biggest yards in the city, all owned by the Hydraulic, went out of business. A great quantity of work was held in suspension for weeks pending adequate deliveries of brick, and frequent tight pinches arose.

That this condition should be prohibited during the coming summer is accepted throughout the trade. The excellent outlook for business should be supported by ample facilities for taking care of orders and making deliveries promptly, inasmuch as the stimulative effect of the booms of 1911 and 1912 will have by no means died out next summer. With two well-equipped yards owned by a company which has suspended operation available at their command, a syndicate of well-known brick contractors proposes to take over these properties with a view of operating them. The combined capacity of the twin establishments is 100,000 brick per day, and with

this figure cut out of the available supply, it is small wonder that last summer's famine pressed closely upon the builders from time to time. Announcement of the sale of the Hydraulic yards to parties who will resume operation in time for spring deliveries may be expected in the near future, according to reports.

The precipitation of a flood, followed by freezing weather and not a little snow, has been unable to restrain the East End Brick Company, of Louisville, from full-time operations during the month, so fast and furious has been the current of short-order trade at the local yards. Just prior to the appearance of the first genuinely cold weather of the winter the company resumed production after a fortnight's suspension for repairs and renovation. Inquiries for future deliveries, according to Paris M. Crane, approximate 1,000,000 brick with the East End.

The Kentucky Vitriified Brick Company, a well-known local concern producing terra cotta as well as a high grade of vitriified paving brick, has completed re-equipment of its plant which was necessitated by a recent fire damaging that establishment to the extent of \$50,000 or more. The company is to resume operation March 1 upon a scale that will be bigger and better than ever before. The new Kentucky yards are to be as thoroughly fire-proofed as possible, and to this end a dryer made of terra cotta instead of frame or sheet-iron has been erected, while a number of improvements have been made in the mechanical equipment of the concern. The brightest business prospect confronts the Kentucky.

William Joseph Chipman, a well-known business man of Owensboro, Ky., and the founder of the Kentucky & Tennessee Clay Company, died at the Jewish Hospital in Louisville recently. Mr. Chipman was the founder of the Southern Life Insurance Company as well as of the Kentucky & Tennessee Clay Company. In the latter enterprise, which is capitalized at \$200,000, he was largely interested at the time of his death. Mr. Chipman is survived by his widow, Mrs. Minnie Fleming Chipman; a son and daughter, all residing in Owensboro.

The Tiffany Brick Company, of Tiffany, O., has secured a contract from the H. H. Snyder Company, general contractors, for the erection of the 11-story home of the Great Southern Fire Insurance Company at Fifth avenue and Walnut street in this city and for furnishing a large quantity of white enameled brick in the Republic, as the insurance company's home will be known. The Ohio product is particularly high class, and has been specified to lend the desired rich finish to the exterior of the handsome structure.

The American Arch Company has filed suit against the Buckeye Fire Brick & Clay Company, of Cincinnati, O., alleging violation of patent rights upon the use of a certain type of arch. The question of priority of usage is now being threshed out by both sides in Judge Hollister's court in Cincinnati, inasmuch as it is contended by the defendant company that the arches which are the subject of litigation were in use with the Michigan Central Railway Company as far back as 1902. Prior use of the invention is being set up as the defense in this case.

NEW YORK.

New York, Feb. 10.—The final closing of navigation on the Hudson river occurred on February 6, when the steamer Rensselaer left Albany for New York on its 317th trip for the 1912 season. No such record as this has been made since January 19th, 1810, one year after Robert Fulton's first steamboat came up the Hudson. Simultaneous with the introduction of real winter weather for the first time this year, prices of common brick in this market stiffened to \$7 basic and covered brick was quoted at \$7.50. Yard prices in Newark went to \$8.25 and may stiffen even at that figure.

The demand for common brick during the last two weeks has been very poor. Dealers continue to buy from stocks rather than from barges. The old complaint about slowness of steel deliveries tying up other basic building commodities is no longer accepted as valid for the reason that increased steel capacity is permitting freer delivery as far as the East is concerned on schedule running from four to six weeks. Close investigation of the New York building situation at the moment reveals the fact that the

chief complaint now is that there is a temporary lull in the volume of new structural contracts coming out. This condition has generally been looked forward to by contractors for two reasons. First, because they wish to get a closer line upon the ultimate price level of building materials before figuring on the coming season's jobs, and further because owners are inclined to wait until a date nearer the opening of the May renting season so that they can get a line upon the volume of leases and ascertain what type of building has been over-constructed, if any.

Dealers in New York City have been slightly unnerved as a result of several failures in close sequence among building and engineering contractors of more or less prominence. This uneasiness has inspired surmises among building material dealers as to what factors could possibly be existent at this time sufficiently potent to embarrass old established firms. The ones involved are of established reputation and when announcement of their petitions in bankruptcy was made in 1, 2, 3, order, building material dealers who have been supplying similar jobs throughout the district began to wonder when the possession would stop.

Investigation has shown that the primary factors in the troubles of these firms and with others suffering business embarrassment at this time are three: First, failure on the part of those figuring jobs to discount the steadily rising prices of building materials; second, under-estimating, and, third, taking business beyond the capacity of their resources.

Basic construction conditions are excellent. The real estate market is more active than it has been for almost six months. Building money is comparatively easy, especially for gilt-edge propositions, and the building material market is firm with mill supplies conservatively low and the distributing market well stocked. Dodge Reports show a healthy tone in the matter of prospective building operations throughout the entire Metropolitan District and architects as a rule report full boards.

The general condition of the market is such that under ordinary circumstances it could well take care of pending construction work. There does not seem to be, at this time, at least, any danger of a serious shortage of common brick. Although navigation has been open longer than ever before known in the Hudson Valley, so many barges have been tied up at this market under load, that manufacturers have found it difficult to get sufficient bottoms on which to ship during the open season. The result is that if the freeze-up continues, the brick now on the market will have to be sufficient to meet current requirements until some of the empty barges can return to up-river shipping points. For that reason the present stiff quotations on North River common brick are liable to continue and may even advance, as the spring season approaches.

In the front brick market the demand has been exceptionally good all during the winter and prices have been inclined to stiffen. Approximate consumption figures for front brick in the Metropolitan district covering 1912 have been compiled. They show material gain over the figures for 1911, 1910 and 1909. For the Metropolitan District the total consumption of front brick in 1912 was 103,000,000; in 1911 the consumption was figured at 95,660,000; in 1910, 96,000,000, and in 1909, 98,000,000. The estimated total of enamel brick sold in this district in 1912 was approximately 5,000,000, as against the estimate of 4,000,000 last year. This is not inclusive of porcelain brick which has figured as front brick.

These values are based upon an average yearly price for all kinds of front brick sold in this market at \$28 a thousand (basic) as against a basic price of \$23 a thousand wholesale prevailing last year.

The total consumption of front brick exclusive of enamels in New York City during the last four years, with values, follow:

Year.	Consumption.	Value.
1912.....	87,000,000	\$2,436,000
1911.....	60,000,000	1,380,000
1910.....	70,800,000	1,699,200
1909.....	75,000,000	1,875,000

In the fireproofing department there is a large amount of work being figured and there is a general belief that prices will stiffen as the 1913 building season opens. The architectural terra cotta companies are reporting considerable activity.

Evidence tending to show that all of the testimony of the Greater New York Brick Company, through the dis-

trict attorney's office, is not yet completed, was shown this week when requisition was made by the district attorney's office for documentary data from one of the witnesses who has already testified in this procedure. The impression has been generally accepted that all of the testimony has been taken.

Senator John B. Rose, president of the Greater New York Brick Company, and party, who have been visiting the Panama Canal zone, are expected to return about the 15th.

The Sayre & Fisher Company, of New Jersey, is operating its pressed brick yards to about 70 per cent of capacity. The situation as far as Raritan brick is concerned in this market is decidedly favorable and contracts are being taken for spot delivery from yard up to the present writing. Some ice was reported in South River on the 7th, but there was not enough to stop either navigation or mining. The Hackensack district reports a demand sufficiently large to take all of the reserve supply in sheds and there is very little of this brick coming into the New York market at present.

CHICAGO.

Chicago, Ill., Feb. 13.—The open weather conditions have permitted building operations to continue unhampered by either snow or cold, work not having been suspended for a single day. These extensive and unprecedented operations give rise to the question as to whether the supply of materials for the coming months will be adequate to meet the demand. The brick makers whose plants are closed for the winter find that their stock of brick is practically exhausted while those in operation are equally perplexed in so far as they are unable to accumulate any stock as their output is consumed by immediate shipments.

The building operation in Chicago for the month of January amounted to \$6,902,000, covering 476 permits, compared with 422 permits at an expenditure of \$1,999,500, for the corresponding period in 1912. The total number of permits in 1912 was 332,384, costing \$88,054,800 and in 1911 there were 299,032 permits amounting to \$105,269,700. While the figures show that the cost of the buildings in 1911 far exceeded the succeeding year, the actual amount of building operations in 1912 was considerably greater than that of 1911. The large figures in 1911 were due to the new ordinance that restricted the height of the buildings from 260 to 200 feet and permits for all skyscrapers were obtained previous to Sept., 1911, the time this law took effect.

There is no doubt but what the Clay Exposition will bring much additional business. Clayworkers throughout the entire country are greatly enthused over the coming event which promises to do much for the promotion of burned clay products. All lines of clay products will be more generally displayed than last year and many former exhibitors have contracted for larger space.

The American Refractories Company has more orders on its books, at the present time, than ever before in its history. Its output is confined almost exclusively to furnishing material for steel and iron concerns. Its plant capacity is strenuously taxed and taking into consideration the volume of business on hand together with the developments in sight, it is apparent that 1913 will prove more than satisfactory.

The annual report of the Illinois Brick Co., for the year ending Dec. 31, 1912, shows the best record in the company's history and shows its financial condition is excellent. The net earnings were \$591,454 or an increase of \$130,719 compared with the returns of 1911. These earnings are equivalent to 13.44 per cent earned on the \$4,400,000 capital stock outstanding in 1912 as compared with 10.47 per cent in 1911. The stock of brick on hand at the close of 1912 was approximately 21,000,000 less than a year ago, when the total was 109,000,000.

The stockholders re-elected the former directors and at a subsequent meeting the board re-elected the officers of last year. Wm. Schlake, president of the company, addressed the stockholders in part as follows:

"The year's work may be summed up in one sentence: We have had a prosperous but uneventful year and there

is nothing for me to lay before you, save a comparison of figures and facts with the corresponding data last year. The very open winter has greatly facilitated building operations and has made an exceptionally large demand upon us for deliveries, during December and January. This demand together with the hope of a big demand in the spring, has induced us to continue our yards in operation during the winter months.

"The policy of the company of keeping all of its plants in repair has been adhered to by the officers during the past year and it is my opinion, shared in by the members of the board of directors, that the present physical condition of the plants is even more excellent than it was a year ago, at which time they were regarded to be in splendid condition. The successful operation of the plants during the past year was contributed to, and brought about by the coordination and cooperation of the officers and employes and deserves the commendation of stockholders and for which I am personally exceedingly grateful."

F. J. Silha, manager of the pressed brick department of the McLaughlin Building Material Co., after returning from a two weeks' trip to St. Paul and the surrounding territory is back in the harness and making preparations for the early spring business, which he expects will be exceedingly heavy.

Joseph Mitchell, secretary of the McLaughlin Building Material Co., is an aspirant for the Democratic nomination for the position of City Treasurer of Chicago.

The plant of the Curtis Brick Co., is closed for repairs but will be reopened about the first of March. The past year was a prosperous one for the company and the prospects are encouraging for a good year in 1913.

Irwin Corneau, Chicago salesmanager of the Purington Paving Brick Co., has cast aside his business shackles and is treating himself to a four weeks' vacation in Florida. He expects to return the first week in March.

Mr. Andressen, salesmanager for the Chicago Fire Brick Co., says that their city business for the month of January was twice as heavy as last year and the country orders are even proportionately greater. The company made an excellent start on what he believes will be the most profitable year in its history.

Fred White of the Jenkins & Reynolds Co., who has just returned from a trip covering the states between Illinois and New York, visiting the different face brick manufacturers he represents, says the indications are that there will be a scarcity in numerous kinds of face brick. He feels confident that the business of 1913 will prove even better than that of 1912, which was most satisfactory.

CALIFORNIA.

San Francisco, Feb. 12.—The Diamond Brick Co. of this city has placed a new line of face brick and tiles on the market under the copyrighted trade name of "Texturesque." This new line is manufactured by the stiff mud process, and the makers claim for it all the superior physical qualities of a stiff mud brick together with the soft exterior effect procured by the sand mold process. The company is just introducing this new line, and reports considerable interest among architects and builders, who pronounce it of exceptional merit. The appearance of the "Texturesque" appeals strongly to the eye, making it particularly suitable for veneering on high class residences.

Brick men of San Francisco and of California in general are interested in the contemplated sale of the Carnegie Brick & Pottery Works and its extensive and well equipped plant at Carnegie, Cal. This company was one of the assets of the bankrupt California Safe Deposit & Trust Company of this city, which failed at the time of the panic several years since. The plant is believed to be a valuable one and one capable of being operated at a profit; in fact, it was so operated for some time after the failure of the bank, but has not been running for some time. When in operation the plant had the reputation of turning out an excellent grade of pressed brick, fire brick and sewer pipe. Frank J. Simmes, receiver, has asked for bids for the stock and bonds of the brick company, as well as the other assets of the bank.

The Steiger Terra Cotta & Pottery Works is now put-

ting up the terra cotta on the Crocker Estate building on Market street, between First and Second streets. The building promises to be one of the handsomest in the reconstructed city. Five thousand three hundred cubic feet of standard white terra cotta is being used in conjunction with red pressed brick. The building is to be six stories high and will be completed within six months.

Although Mr. McBean, of Gladding, McBean & Co., is sanguine as to the future and notes that the indications point to a big rush of business in brick and terra cotta in the near future, he admits that at this time of the year when the rains are coming down in spasmodic but heavy quantities the trade can hardly be expected to be as brisk as in the dry season.

G. William Conquist, a prominent engineer and builder of Sweden, has been spending some time here as the representative of Swedish manufacturers, and while here he was shown through a number of the local brick and terra cotta plants. He is an advocate of the use of brick for building and was much impressed with the brick industry as he found it here. He was also surprised at the extensive use of concrete, and declared that in his own country concrete was not used to anything like the extent it is in San Francisco. In fact, the extensive use of concrete in Sweden is impossible on account of the freezing weather which concrete would be unable to stand.

The San Luis Brick Company of San Luis Obispo, Cal., is now busy with the changes which will enable it to begin the manufacturing season in the early spring with an increased capacity. New stiff mud machinery with a capacity of 60,000 brick daily has arrived and is now being installed. The trackage facilities and the power plant of the works are also being improved and enlarged to a considerable extent.

Dr. W. A. Silliman of Seattle, Wash., who is promoting the establishment of a brick and clay products plant at or near Seattle, has returned from a tour of some of the eastern clay manufacturing districts with glowing reports of the tests made with the clay samples taken east by him. Dr. Silliman and his associates control extensive clay deposits near Black Diamond on Green River in the state of Washington, and it is now proposed to incorporate a company with a capital stock of about one million dollars for the erection of a plant to utilize these deposits.

J. A. Walker and others of Chico, Cal., are advocating the establishment of a brick plant at that place, and are anxious to get in touch with a man of experience and capital who might be induced to locate a brick making plant at Chico.

J. N. Gregg, president of the Holt & Gregg Brick & Lime Company of Redding & Kennett, Cal., spent some time in Sacramento last week looking after the interests of his house. The large amount of substantial building going on at Sacramento makes that city a point of great interest to brick manufacturers.

The McNear Brick Company of this city, whose manufacturing plant is on the other side of San Francisco Bay, has brought to the attention of the Board of Harbor Commissioners the desirability of assigning a special dock on the San Francisco water front for the use of brick men. The company points out the advantages of having special facilities, including the greater ease in supplying the constantly increasing demand for brick by San Francisco builders. It is understood that the Board of Harbor Commissioners will assign the desired dock if one can be found that can be given over to the brick men exclusively.

The Oakland Paving Brick Co. is remodeling its entire plant at Decoto near Oakland, Cal., and is putting in new driers and kilns. About one hundred and fifty men will soon be put to work on the plant turning out paving brick.

The Modesto Brick Co., of Modesto, Cal., has on hand about 600,000 to open the spring season with and is planning to burn a large quantity early in the year.

City Engineer J. J. Jessup, of Berkeley, Cal., has completed and submitted to the City Council of that place plans for additional sewer work. Three sets of plans are submitted for work ranging in cost from \$60,000 to \$475,000.

At the annual meeting of the Pacific Coast Pottery &

Terra Cotta Co. the report of the directors showed a satisfactory increase in the business over that of the preceding year, and the prospects for 1913 are considered good.

The officers were re-elected as follows: F. Eberhardt, president; C. W. Fancher, vice president; E. C. Hamlin, secretary and manager; J. Frank Leffler, assistant secretary, and N. E. Wretman, attorney. The Garden City Bank & Trust Company was also re-elected as treasurer of the company.

OHIO.

Columbus, O., Feb. 13.—Notwithstanding the cold weather during the latter part of January and the early part of February, the brick industry in the Buckeye State has continued very active. Practically all of the brick-making plants in the Hocking Valley and Eastern Ohio have been operated with a full force, and the output has been kept up to a large degree. Managers of factories are preparing for a rush of shipments in the near future and as a result have been straining every point to get a good stock on hand.

Shipments are continuing good despite the cold weather. The car shortage has now eased up to a large degree and there is little trouble in getting sufficient cars. High waters which delayed shipments in certain sections have disappeared and no trouble is experienced from that source.

Brick men in the Buckeye State are preparing to attend the big clay exposition and the meetings of associations which will be held in Chicago the latter part of February and the first of March. Many Ohio concerns will have large exhibits at the show and practically every plant will be represented at the meeting. Activity prevails in every branch of the industry, in paving brick, face brick and common brick.

At the annual stockholders' meeting of the Columbus Brick & Terra Cotta Co. of Columbus, the following were elected directors for the coming year: James Kilbourne, Felix A. Jacobs, R. S. Warner, Willis G. Bowland, R. H. Platt, Lincoln Kilbourne and L. G. Kilbourne. L. G. Kilbourne was elected president; Felix A. Jacobs, vice-president; Charles Wardlow, secretary; J. B. Cooper, assistant secretary, and Ben S. Fisher, superintendent.

The stockholders of the Crooksville China Co. of Crooksville, Ohio, at the annual meeting held at that place, elected J. L. Bennett, president; W. H. Brown, vice-president; Guy E. Crooks, secretary, treasurer and general manager. The company contemplates the building of another kiln and the installation of a private telephone system. The company reports the outlook for the coming year as very bright in every respect.

Tile manufacturers in Ohio will be benefited by the recent ruling of the Interstate Commerce Commission suspending the proposed increases in freight rates on drain tile between points in the Central Traffic Association. The new rates proposed advanced rates from $\frac{1}{2}$ to $1\frac{1}{2}$ cents per 100 pounds.

E. P. Lippincott, president and general manager of the Pittsburgh, Pa., Tile Manufacturing Company, located at East Liverpool, O., will display samples of their wares at the Clay Products Exposition in Chicago, February 26th. The East Liverpool Chamber of Commerce succeeded in establishing this, one of the most progressive factories in the city and, with the high and extensive standards of manufacturing adopted by the firm, its display at Chicago, is expected to be a brilliant one.

At New Lexington, O., the Shawnee Flash Brick Co. placed its plant in operation February 1. The works had been idle for a few weeks, pending the completion of necessary repairs.

The C. M. & M. brick plant, which is also at Lexington, closed on January 25, in order to make a number of repairs. The works will be started just as soon as this task is completed.

The Deckman-Duty Brick Company, of Cleveland, O., which operates a number of plants in the Carrollton district, is doing a remarkable business, every factory being operated to its capacity. Last year, this company is said to have shipped 9,200,000 brick.

THE TWIN CITIES.

Minneapolis, Minn., Feb. 12.—Building prospects are good for the spring, according to P. O. Lenz, of the Hydraulic Press Brick Co. Manufacturing the higher qualities of brick, the company has ample stock on hand and reports good orders. With the new year, this company adopts the trade mark "Hy-Tex" for all its products, and is one of the first to undertake an extensive campaign of advertising which will take in not only trade papers all over the country but also magazines such as the "Saturday Evening Post" and "World's Work."

One of the few local firms reporting an ample supply of brick on hand, the Black Hawk Clay Products Co. reports itself as ready to fill all orders and looks forward to a good season. Anticipating great demand through the winter, stocks were increased last fall, and as a consequence, the company is in good shape to take care of the spring demand.

The beautiful color effects obtained with the mat face brick made by the Twin City Brick Co. are proving very popular with the trade. This brick is so made that it can stand great extremes of heat and cold and the colors are many and blend well in the finished work. Good prospects for the spring and many orders on hand cause this company to look forward with eagerness to a change in the weather which will hasten building operations.

The Menomonie plant of the Wisconsin Red Pressed Brick Co. is all out of special kinds of brick, according to W. Sargent, Minneapolis agent, and stocks in general are running very light for this time of year.

With only six million brick on hand in Minneapolis, including those made at the city workhouse, of which four million are clay brick, E. G. Chapman, secretary of the Belt Line Brick Co., states that prices are rising from \$7.25 to \$8. The clay brick manufacturers will be unable to fill dealers' orders until about July 1st, according to present indications, and the result will be increased prices in this territory for the spring.

Large local firms are carrying Northwestern dealers on their books for accounts as low as twenty and thirty dollars, owing to shortage of grain money in the Northwest. As usual, any delay in marketing the crop is felt in all lines of business in this section, and the brick business is no exception to the rule. In North Dakota, especially, farmers are holding grain, not so much for a profit as to make sure of getting a price which will enable them to clear up the debts of the past year. The trade feels no uneasiness, however, and dealers generally manifest no fear, but seem confident that the situation will adjust itself in time to insure a big spring business.

Wisconsin ranks about third now in clay and brick manufacturing, according to the address made by J. P. McLean of Menomonie, Wis., to the Wisconsin Clay Manufacturers' Association at Madison, Wis. The past year has been a good one, as a whole.

MICHIGAN.

Detroit, Mich., Feb. 12.—With the exception of the past two or three weeks this has been an exceptionally open winter, and it has enabled Detroit and Michigan brick manufacturers who were dependent on weather conditions to get out considerably greater stocks than they would have, had real winter weather prevailed during the months of December and January. Factories throughout the state have been running stronger this winter than last because of the probably early demand for stocks from contractors.

The Michigan Hardwood Manufacturers' Association held its winter meeting in Detroit last month and the members present were unanimous in the opinion that hardwood stocks would show an advance of about \$10.00.

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OF CHALDEANS—SEE PAGE 220

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The Theatres advertising therein have arranged clean, wholesome bills for Clay Show and Convention Week, and all visitors wearing N. B. M. A. buttons and badges will be given good seats and special attention.

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CHICAGO

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No. 5

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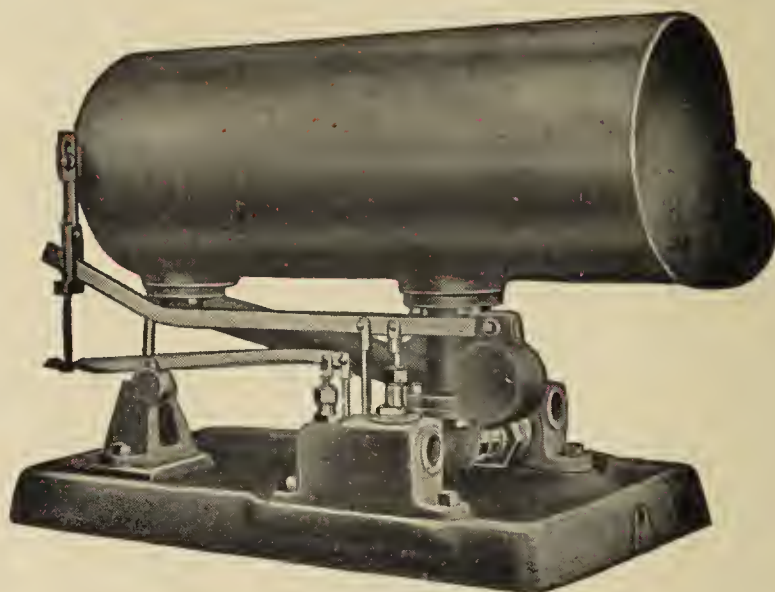
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The Picture Above Was Taken on the Second Day of the 1913 Clay Show and Is a View of One End of One of the Pergolas In the Stupendous Exhibit of the Chicago Face Brick Association.

BRICK

and CLAY RECORD

VOL. XLII.

CHICAGO, MARCH 1, 1913

Number 5

CLAY SHOW OPENS AS THRONGS BESIEGE DOORS

Thousands Attend First Two Days of Big Exposition—Exhibits Excel Those of Last Year—Many New Features Are Introduced to Cause Wonder and Amazement—Convention Delegates Arrive



CLAY—prosaic and unattractive to the uncultured eye as it is before man gives to it his magic touch, but wondrously useful and possessing poetry and art in its composition as it leaves the clayworker's deft fingers, came into its own on the evening of Wednesday, Feb. 26, at the

It is a monster exhibit—far greater than anything ever attempted by any other industry.

More than \$2,000,000 was expended in its preparation.

More than 5,000 persons directly assisted in its construction.

CONVENTION AND CLAY SHOW WEEK'S PROGRAM.

MONDAY.

CLAY SHOW—Opens at 11 a. m.; closes 11 p. m. Band concert and motion pictures in the evening.

N. B. M. A.—Convention convenes at Congress Hotel at 10 a. m. Morning session only.

N. P. B. M. A.—Convention convenes at Congress Hotel at 10 a. m. Afternoon session also, at 1:30 o'clock.

ENTERTAINMENT—Visitors will be given an opportunity to see Chicago and its suburbs. Tell any member of reception committee where you want to go—he will direct you.

TUESDAY.

CLAY SHOW—Opens at 11 a. m.; closes at 11 p. m. Band concert and motion pictures in evening.

N. B. M. A.—Convention convenes at 9:30 a. m. Morning session only.

N. P. B. M. A.—Convention convenes at 9:00 a. m. Afternoon session also, at 1:30 o'clock.

ENTERTAINMENT—The Illinois State Association will hold banquet and session at Auditorium Hotel at 6 p. m. Theater parties.

WEDNESDAY.

CLAY SHOW—Opens at 11 a. m.; closes at 11 p. m. Band concert and motion pictures.

N. B. M. A.—Convenes at 9:30 a. m. No afternoon session.

A. F. B. A.—Board of directors meet at 8 p. m.

N. P. B. M. A.—Convenes at 9:00 a. m. No afternoon session. Adjournment.

B. B. A.—Convenes at Congress Hotel at 9:30 a. m.

CHALDEANS—Institution of Chicago Temple, No. 1, Ancient Order of Chaldeans, the new Secret Society of Clayworkers, in Main Banquet Room Auditorium Hotel, 8 p. m. Banquet and cabaret to follow.

THURSDAY.

CLAY SHOW—Opens at 11 a. m.; closes at 11 p. m. Band concert by Hand's band, motion pictures and Kilties' Band of Scotland.

N. B. M. A.—Convenes at 9:30 a. m. No afternoon session.

A. F. B. A.—Convenes at Congress Hotel

at 9:30 a. m. Afternoon session at 1:30 o'clock.

B. B. A.—Convenes at 9:30 a. m. at Congress Hotel.

ENTERTAINMENT—Visiting ladies will be given a matinee party at Princess Theater at 2:15 p. m. In the evening the annual banquet of the N. B. M. A. will be held at the Auditorium, preceded by a reception at 6 p. m.

FRIDAY.

CLAY SHOW—Opens at 11 a. m.; closes at 11 p. m. Concerts and motion pictures in evening.

N. B. M. A.—Usual session at 9:20 a. m.

A. F. B. A.—Convenes at 1:30 p. m. and after election of officers adjourns.

ENTERTAINMENT—Smoker and vaudeville in Gold Room of Congress Hotel by the Chicago Clay Club.

SATURDAY.

CLAY SHOW—Closing day. Opens at 11 a. m. Two prize brick houses to be awarded to winners. Closes at 11 p. m. with grand band concert.

N. B. M. A.—Convenes at usual hour and adjourns.

Coliseum, Chicago, and for eleven days, at least, it will hold full sway in the attention of the public.

With the sound of the trumpet and cymbal the Second Annual Clay Products Exposition was opened on that date. There were no formalities. The doors opened—the crowds rushed in.

There is nothing that is made from clay that does not find a representation at the Exposition.

More than 1,500 separate and distinctive exhibits are on display.

From artistic jewelry and medals of terra cotta moulded into shape by the hand of an artist, to a

complete brick house—from costly pottery, the very acme of the ceramic art, to fireproof chimneys and hollow block silos, the vision of the eye is led.

There are marbles, statuettes and statuary, terra cotta for the lofty skyscraper, tobacco pipes, washboards, tableware, sewer pipe, drain tile, roofing



This is How the American Encaustic Tiling Co's. Exhibit Looked on the First Day of the Show.

tile, building tile, paved streets, variously colored and tinted fancy brick for the modern fireproof home, acid tanks, flower urns, pots and vases, fireplaces and mantels, fancy tile floors and walls, garden walls, sidewalks, jugs and scores and scores of other products—all of burned clay, each and every article attesting to the wonderful flexibility of the material, to its unquestioned usefulness, to its positive superiority.

With all this array of the ceramic art gathered together in one great harmony of color and design—with the countless electric lights, the vast crowds of interested visitors, the bustle and hustle of the small army of attendants and exhibitors—the Coliseum presents a spectacle seldom seen as a tribute to an industry.

On the first four days of the Exposition, the attendance was such as to assure the fulfillment of the prediction that the visitors during the eleven days would more than exceed 300,000.

And there were yet to come the Sabbath when Chicago was to pour its idle thousands into the Exposition and the week to follow which would mark the arrival of the membership of the National Brick Manufacturers' Association, of the National Paving Brick Manufacturers' Association, of the American Face Brick Association, of the Building Brick Association of America and the other state and district organizations, who come to attend their several conventions.

The Second Annual Clay Products Exposition is a success because it is serving its purpose.

It has brought to the attention of the Nation the

superiority of clay products—their diversified uses, its imperishable nature, their architectural possibilities, and it has done it in a convincing way—in a manner that means education of the masses, enlightenment of the builders and architects and contractors.

It has drawn thousands and will draw many thousand more to this stupendous spectacle—this pageant of harmony in color and design and this exemplification of ornamentation, usefulness and permanency.

These will go out into the busy world of commerce with a knowledge they never before possessed. Messages of enlightenment will be spread. Burned clay will come into its own,

The Exposition was opened without any formality promptly at 7 o'clock Wednesday evening. Despite the blinding snow storm that started early in the day and continued late at night, there was a fair attendance.

With but one or two exceptions all the exhibits were in place before the doors opened, even to the \$2,000 prize brick house which was constructed inside of the Coliseum to prove it is possible to erect a suitable fireproof dwelling for workmen at a reasonable price.

House Proves a Great Attraction.

This house is one of the main attractions of the Show and two exact duplicates, together with lots that cost \$1,000 each, are to be given away during the Exposition. The Chicago Examiner has been conducting a popular voting contest for several weeks and the winner of this contest is to receive one of the completed homes. The Clay Show management, at the last moment, decided to repeat its generous offer of last year and will give the other house and lot to the person guessing the nearest to the number of small clay marbles in a large glass jar. Both houses will be awarded Saturday, the closing day of the Exposition.

The prize brick house was built from plans and designs submitted by the winner in the architectural contest and is looked upon as a model. It is a two-story structure, built entirely of burned clay products, even to the roof,



The Display of the Western Brick Co. of Danville, Ill., as it Appeared While Being Installed Tuesday, February 25.

which is of tile. Chicago common brick enter largely into the construction. There are six rooms—three down stairs and three upstairs. The rooms are large and particular attention has been paid to the ventilation and lighting. This is especially true of the sleeping rooms, of which there are three, all on the second floor. The arrangement

CLAY SHOW VIEWS DURING CONSTRUCTION PERIOD



Bricklayers Putting the Finishing Touches on the \$2,000 Prize Workingman's Home.



Birdseye View of the Clay Products Exposition In Course of Construction.

of windows is such in these that they literally may be turned into sleeping porches in the summer time if desired.

There is a large reception or living room on the first floor. The dining room and the kitchen are likewise located on this floor. There is a butler's pantry, closets in every room and an extra one in the hall upstairs. All the rooms are harmoniously decorated, the wall paper blending perfectly with the beamed ceilings. The kitchen and bathroom are special features and, the cost considered, are models.

Face Brick Exhibit Causes Wonderment.

The most sensational feature of the entire Show, however, is the \$20,000 exhibit of the Chicago Face Brick Association. It occupies the central portion of the Coliseum and is first to greet the eye of the visitor, as the main entrance leads directly into it.

This exhibit is designed to represent a driveway leading up to an old English tea house. Pergolas on either side heighten the effect and, while these were designed to give the members of the association, with the 285 face brick plants they represent from every section of the country, an opportunity to display their wares, the scheme is carried out in such an artistic manner as not to give offense.

As a matter of fact the entire exhibit was planned to add to the decorative effect of the Exposition and the commercial side was very unselfishly made subservient to the artistic. The only sign that is to be seen is the electric one at the extreme east end of the exhibit, just over the old English tea room. This proclaims to the visitors that the Chicago Face Brick Association stands sponsor for the display.

Large brick pillars mark the beginning of the two pergolas and are works of art in themselves. Ivy vines, of the English variety to carry out the Old English decorative scheme, cover the pergolas. The walls of the pergolas are built in with panels of face brick of every known texture and shade, and their artistic treatment is due largely to the Bricklayers', Masons' and Plasterers' International Union, which supervised the entire masonry work of the Exposition.

In the roadway that leads up to the Tea Room there

is "The Crystal Pool." This is a sunken basin built of brick and with pure crystal sand covering its bottom. Water lilies in the pool and palms and plants lining the edges of the pool add much to the charm of the conceit. A large fountain at the extreme end of the pool pours forth a spray of water. Mirrors at its base heighten the crystal effect of the pool.

Seek Their Future in Mystic Pool.

It is no uncommon sight to see tender-eyed swains pausing to gaze into the waters of the pool. Some one suggested that in its magic waters the future can be foretold, and the message has flashed through the Coliseum like wireless, to give hope and encouragement to many a love-sick couple.

On either side of the pergolas, and through the rear of the tea room, are exits which lead to the various exhibits at both ends of the Coliseum hall.

There are 150 exhibition spaces occupied, but, inasmuch as many of these spaces represent a number of individual exhibits or plants, the figures give little idea of the great variety of clay products that are shown.

For instance, in the Chicago Face Brick Association exhibit alone there are 285 different face brick plants represented, these covering practically every state in the Union. In the Iowa exhibit, the largest of the state displays, there are, in addition to some of the larger plants which occupy one or more spaces themselves a score or more of concerns which have their wares shown collectively, each one bearing its distinctive label.

This is true of the Illinois State exhibit and many of the other association displays, and, in round numbers, it may be said that more than 1,500 individual plants are represented.

While this Show exceeds by far last year's Exposition in magnitude, this does not concede that it suffers in comparison in the artistic treatment. There is more harmony in the arrangement, better treatment from the architect's viewpoint, and a far better classification scheme. To illustrate this latter point it is only necessary to call one's attention to the grouping of the common brick people, the various associations, the potters and the sewer pipe manufacturers. This same careful segregation applies to every branch of the industry.

Encaustic Tile Attracts Attention.

One of the most striking exhibits is that of the American Encaustic Tiling Co., of New York and Zanesville, Ohio and it is to be regretted that it does not occupy a



Bricklayers', Masons' & Plasterers' International Union Exhibit as It Appeared Wednesday Morning, February 26.

more conspicuous location. This shows three ideal treatments in architectural faience—a drawing room, a library and a dining hall. The entire display was laid out by the company's chief designer and was especially constructed for the Exposition. The mantels, the floors, the fountain and the wall panels blend in harmony of color and design and would grace the most priceless palace among the nations of the world.

Among some of the special features that attract the passing visitor are the clay modelers, the potters at work, the Chicago Fire Protection exhibit, Mrs. O'Leary's cow and shed, and the Kilties' band direct from Scotland.

The Chicago common brick manufacturers have one of the best exhibits on the floor. In addition to having supplied the material for the \$2,000 prize workingman's house which is to be given away during the show, there is a general exhibit by several manufacturers and a number of individual exhibits that merit considerable credit. One of these special displays that attracts considerable attention is a section of the proposed Chicago subway, built one-third size from the standard plans of the Harbor and Subway Commission. Common brick are used throughout and Chicagoans particularly are drawn to the booth. The



Alphonsus Custodis Chimney Con. Co.'s Exhibit Nearing Completion.

other individual displays show what can be done by the use of common brick.

To the clay product manufacturer the exhibits of the

various National and State associations appeal very strongly in view of the re-awakened interest in the "get-together" spirit. These outnumber last year's and certainly are more comprehensive.

The association section is located in the south end of the great hall and, as far as practicable, the associations are kept close together. Beginning with the booth of the National Brick Manufacturers' Association at the extreme southern end of the central aisle, one finds the Paving Brick Publicity Bureau of Chicago, the Western Paving Brick Manufacturers' Association, the Illinois Clay Manufacturers' Association, and the Iowa Clay Manufacturers' Association. To the aisle just to the west, and beginning at the south end, there is, first, the National Paving Brick Manufacturers' Association, then the Building Brick Association of America and the Wisconsin Clay Products Association.

Both of these aisles lead directly into the Chicago Face Brick Association exhibit, which, of course, carries out the general classification plan and brings all the various associations within a certain area.

The N. B. M. A. exhibit necessarily must have narrow limitations in its treatment, as it does not cater to the commercial end. It suffers, therefore, in the elaborateness of the display, when compared with some of the sell-



The Wm. E. Dee Co.'s Exhibit as It Appeared the Day Before the Opening of the Show.

ing and publicity organizations which have every opportunity to display manufactured products and present good selling arguments. Secretary Theodore Randall, however, has arranged a very pretty booth, having uppermost in his mind the comfort and convenience of the members who may find occasion to seek a restful moment.

Argues for Brick-Paved Roads.

The National Paving Brick Manufacturers' Association has one of the most elaborate exhibits, although some of the State organizations run a close second. Secretary Blair not only shows sample paving block from some of the best plants of the country, but has pictures that add to the convincing arguments of the exhibit.

There are at least two features in this space that attract the visitor. One of these is the model showing a cross section of a perfectly constructed vitrified brick paving block as advocated by the association. The ends of this model are covered with heavy plate glass so that those interested may get a detailed idea of the form of construction. The earthen base is shown at the bottom, its proper preparation being clearly brought to view. Next comes the layer of concrete and the sand cushion. Exact figures are given on these, as the specifications are very explicit as to the depth of both. The block are then shown before they are rolled and made ready for the cement filler. At the other end of the model the com-

pleted street is shown with a perfectly smooth surface.

The groups of contractors, municipal and country highway commissioners and engineers that are constantly in this booth proves that Secretary Blair has arranged a most striking demonstration of vitrified paving block.

The second feature that attracts attention and which interests the masses is three pictures that adorn the center of the wall. In the middle of this group is a large photograph of a road near Rome, Italy, that was constructed in the reign of the Caesars. This photograph was taken recently and the horse-driven vehicle to be seen coming down the highway indicates that the road is still in practical use, which it is.

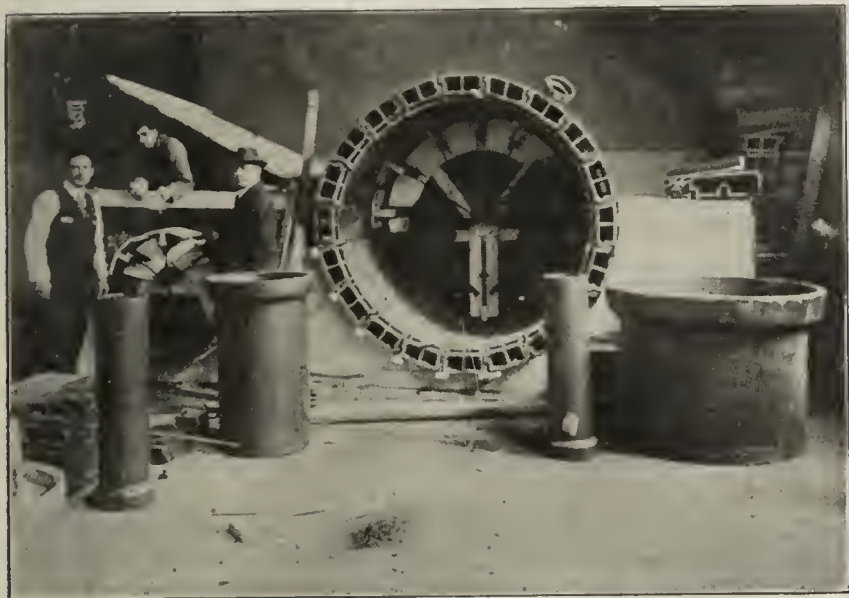
When Secretary Blair explains that this road was constructed when Rome was a power in the world and points out to you the crumbling buildings of some ancient temple and then the still-serviceable brick-paved road, one realizes what is meant when the modern vitrified paving block is spoken of as imperishable, for the brickmakers in the days of the Caesars certainly did not make the finished product that the manufacturers do today.

On either side of this central picture are two others. They are reproduced from ancient paintings that were

Romans the same block in their day as we have today, and following the same specifications in laying them as we do, the old Roman highway shown in the photograph would be without a blemish.



The Astrid S. Rosing Exhibit.



The American Sewer Pipe Co.'s Exhibit in Course of Construction.

Located at one end of the N. P. B. M. A. exhibit is a special space allotted to the Dunn Wire-Cut-Lug Brick Co., as a special tribute to this enterprising concern which is exercising such a great influence over the paving block industry of today. The Dunn Co. controls the wire-cut-lug patents and as there are already seventeen of the largest paving plants in the country under license, these seventeen having an annual output of more than 300,000,000 brick which they are turning into the Dunn block, it can be seen what a powerful influence the company has in the industry.

The Dunn special exhibit was rather late in being installed. It shows model construction of the Dunn block and a number of very fine pictures of mammoth proportions illustrate the perfect roadways that have been constructed with the block.

Next to the N. P. B. M. A. exhibit is that of the Frost Process Co. of Chicago. This concern's exhibit is not a part of the association exhibit, but comes under the general classification of the paving exhibits. The Frost is a

made by masters of the Caesarian period. One shows a force of men actually at work constructing a brick-paved street, believed to be a portion of the one that is shown in the photograph already described. One marvels when he has pointed out to him a workman busily engaged in rolling the brick with a heavy roller much as is done today, and another tamping the earthen base for the reception of the brick, using a large tamper or sledge similar to the modern implements of the same nature. The other reproduction shows the completed road as the artist painted it at the time of its completion.

As your eyes leave these interesting pictures, Secretary Blair or his assistant, H. H. MacDonald, who have been watching you, steps forward with considerable pride and calls your attention to two sections of brick paving that were taken up recently from Cleveland streets for the purpose of showing them at the Exposition. He does this for comparison, as one of these sections is from a heavily-traveled street in Cleveland that was constructed seven years ago and the other from one that was made eighteen years ago. Both pavements were laid with vitrified paving block under the same specifications as recommended today by the N. P. B. M. A., and are as smooth and perfect as they were the day they were constructed.

Secretary Blair will tell you, then, that had the early

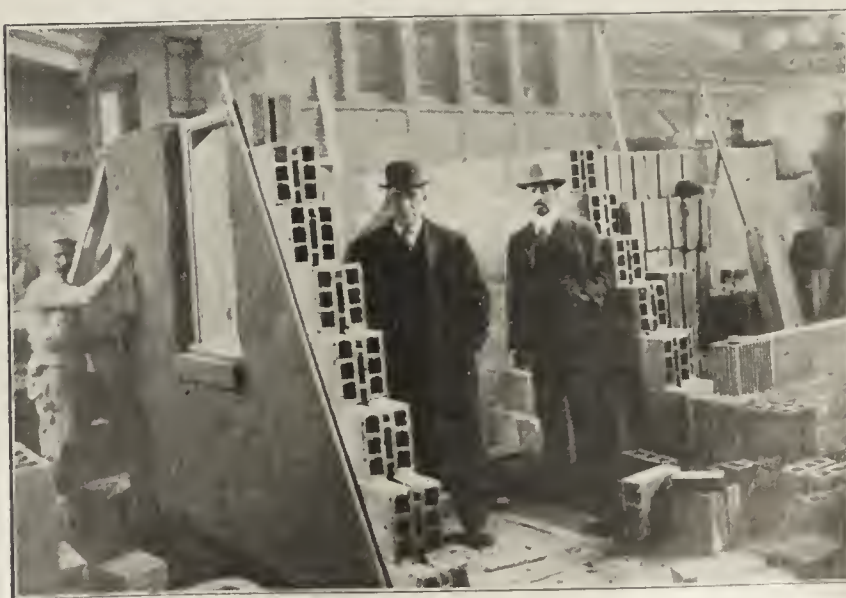


Exhibit of the Denison Fireproofing Co., of Mason City, Ia., as it Looked Tuesday, February 25.

lug block and, like the Dunn brick, requires no repressing.

The Building Brick Association of America had some delay in installing its exhibit and as it was not complete

at the time this issue goes to press cannot be described in detail. Secretary Fiske, however, never does things by halves and it is safe to say that the display will be a credit to his organization as well as the entire building brick industry which it represents.

The Western Paving Brick Manufacturers' Association was to have had its exhibit just to the rear of the N. P. B. M. A. Secretary George Thurston had not arrived at the time this issue went to press, but he has made elaborate plans for showing a perfectly constructed brick street and the booth will be one of the features of the show.

The Clay Products Bureau of Kansas City, Mo., of which George Tefft is the secretary, and which lately has extended its field to the country at large and which boasts vitrified sewer pipe, has a special exhibit which was being installed as this journal goes to press. Any one who visits it will go away with considerable knowledge of the

per cent of the cost of the labor in the brickwork of the Exposition. This proposition was accepted and President Bowen sent representatives from the headquarters of the Union to personally superintend the work.

The question of the bricklayer, undoubtedly, will come



Mrs. O'Leary's Barn Which Housed the Famous Cow Which Caused the Conflagration of 1871. The Cow was Taking an Hour Off for Lunch when the Picture was Taken, February 25th.

superiority of the burned clay product over concrete or any other competing material.

Bricklayers Have Two Exhibits.

Two of the most gratifying exhibits at the Show are those of the Bricklayers, Masons and Plasterers' International Union and the Chicago local union of the same organization. Both organizations have taken full spaces and constructed special exhibits which are marvels of beauty. President Bowen and Secretary Dobson of the International Union personally supervised the construction of these two exhibits and they were particular to see that none but artists did the work.

These two exhibits mark a new era in the relationship between the manufacturers and the bricklayers and no one thing has created so much discussion and favorable comment among the visiting manufacturers as the attitude of the Union toward the Exposition. As will be recalled by those who read the Feb. 15 issue of "Brick and Clay Record," the International Union very generously and voluntarily offered to accept the burden of twenty



The Above Are Reproductions of Pictures Shown In the N. P. B. M. A. Exhibit at the Show. The First Is a Recent Photograph of a Brick Road Near Rome Built 2,000 Years Ago. The Second Shows the Men Rolling the Earth for the Base In Much the Same Way as We Now Do.

up for discussion before the N. P. B. M. A. and an invitation extended to President Bowen and his associates to be present. If this is done it is expected that a very cordial relationship will be brought about between these two important branches of the industry.

In the state exhibits Iowa, perhaps, takes the lead. This exhibit occupies one half of the central aisle section to the north end of the hall. Drain tile, sewer pipe and hollow block are the chief products in Iowa, but brick, both paving and facing, are not neglected and, therefore, there is a most excellent showing of these products. The



Reproduction from an Early Painting Showing the Laying of Brick on the Roman Highway Illustrated on This Page. Attention is Called to the Man with the Tamper. This Picture Is a Part of the N. P. B. M. A. Exhibit.

exhibitors are more numerous than those of any other state and one, the Davenport Brick & Tile Co., of Davenport, occupies an entire space. The other firms who are represented in this display are: Shackelford Brick Co., Des Moines; Adel Clay Product Co., Adel; Sargent Bluffs Brick Co., Sargent Bluffs; Flint Brick Co., Des

Moines; Ft. Dodge Superior Clay Works, Ft. Dodge; Maxwell Brick & Tile Works, Maxwell; Redfield Brick & Tile Works, Redfield; Reinbeck Brick & Tile Co., Reinbeck; Platt Co., Van Meter; Iowa Pipe & Tile Co., Des Moines; Lehigh Clay Products Co., Lehigh; Plymouth Clay Products Co., Ft. Dodge; Centerville Brick & Tile Co., Centerville; Dows Brick & Tile Co., Dows; Barber Asphalt Paving Co., Des Moines, and the Oskaloosa Brick Co., Oskaloosa.

The Illinois State Exhibit, backed by the Illinois Clay Manufacturers' Association, is the next state exhibit in numerical strength and general arrangement. The exhibitors are: The La Salle Pressed Brick Co., La Salle, two panels; the Sheldon Brick & Building Supply Co., Urbana, two panels; Richard Brick Co., Edwardsville, two panels; Albion Shale Brick Co., Albion; Alton Brick Co., Alton, and the Continental Brick Co., Aledo.

None of the other state exhibits had been installed at the time this issue went to press.

A district exhibit of the New York and New England manufacturers, just across from the Iowa exhibit, at-

tracted considerable attention. This was one of the most expensive of the exhibits and showed the front wall of a brick house, in front of which was a low yard wall also of brick. The display was most artistically designed. The panels that carry the brick of the several individual firms were very ingeniously set in the wall of the house and blended harmoniously with the whole. Those represented in the display were: Cary Brick Co., Mechanicville, N. Y.; C. C. Dyer, Greenfield, Mass.; New England Brick Co., Boston, Mass.

The National Bureau of Standards of Pittsburgh and Washington, a part of the United States Geological Department, is another one of the interesting displays. Prof. A. V. Blieninger, the chief of the Department, and the recognized authority in America on practical clay manufacturing, is in charge of the exhibit.

(Editor's Note.—Owing to the fact that this issue of "Brick and Clay Record" is issued during the progress of the Exposition only a brief story of the big event is here given. In the March 15 issue it is expected to have the most complete report of the Exposition and the conventions of the National Brick Manufacturers' Association and kindred organizations ever printed by a clay product journal.)

SEND BRICK HOUSE TO CLAY SHOW BY PARCEL POST



ENDING a brick house by parcel post is about the last thing in Yankee enterprise, but that is just what the readers of "Brick and Clay Record" have done the past week, and or as much of it as has been constructed, stands in the Coliseum at the Clay Products Exposition as proof positive of the statement.

For several days, or ever since the first appeal was made to the 7,000 readers of "Brick and Clay Record" to respond to the request of the Show management, Uncle Sam's letter carriers have been overworked and the route between the Chicago postoffice and the Coliseum building, nearly two miles away, has been lined with grey-garbed messengers loaded with brick.

Brick were dumped into the Coliseum by the bagful, by the cartful and by the wagonload. So great became the deluge of parcel post packages it congested the regular

mails of the Chicago postoffice, tied up the outgoing mails and caused Postmaster Campbell serious alarm for a while.

The scheme originated with Secretary Hopley of the Clay Show. Always "on the job" and full of ideas, Secretary Hopley took advantage of the new department of Uncle Sam's mail service to not only get the material cheaply for a brick house to be erected at the Show, but to do it in such a novel way as to attract universal attention to the Exposition.

Taking "Brick and Clay Record" into his confidence and asking for the assistance of its readers, Secretary Hopley "started something."

Circular letters were prepared stating for what purpose the brick were required and when. The recipient was asked to respond promptly, sending one brick and addressing it care the Coliseum; he also was asked to call the attention of his local paper to the scheme.



U. S. Postal Clerks Pressed Into Service as Hod Carriers Delivering Parcel Post Brick to Exposition.

POSTAL CLERKS THREATEN STRIKE ON HOD CARRIERS



Postal Clerks Demurring at Being Forced to Deliver Parcel Post Brick in Large Quantities.

That the idea, a most original one, appealed to the nation at large, is shown by the great publicity that was obtained in every State in the Union. Within twenty-four hours after the first letter was mailed to the 7,000 subscribers of "Brick and Clay Record" the brick began to arrive. At the same time, the news was being printed in papers all over the country.

Thousands have attended the Show just to see the "Parcel Post House." When they arrived they found work-

men busy laying the brick—all still in their original package with their tags and stamps intact. These workmen expect to complete the house before the Exposition has grown many days old, although there have been threats by the labor unions to stop the work as the Exposition management, they charge, is using Uncle Sam's mail carriers as hodcarriers. The carriers, too, taking the matter as a joke at first, now wearied by the tons of brick they have been forced to take into the Coliseum, are grumbling, and it is predicted that work may yet be stopped.

COMPLETE LIST OF EXHIBITORS AT THE 1913 CLAY SHOW

The number of exhibitors at the Second Annual Clay Products Exposition outnumbered those of last year and the displays of manufactured clay products surpass the first ones in beauty of design and arrangement. There were more than 130 spaces sold this year, and many of these have as high as 300 individual exhibits. The following list gives the exhibitors under their various classifications:

Common Brick.

Bach Brick Co., Booth D64, Chicago.
Calumet Brick Co., Booth 80, Chicago.
Carey Brick Co., Booth 63, Chicago.
Common Brick Manufacturers, Booths E11-24; 43; D12-14; 27-29; 44-46, Chicago.
Curtis Brick Co., Booths 77-78, Chicago.
Illinois Brick Co., Booths 60-61, Chicago.
Lake View Brick Co., Booth 81, Chicago.

Luttor Brick Co., Booth 81, Chicago.
National Brick Co., Booth 62, Chicago.

Face Brick.

Bradford Pressed Brick Co., Booth D66, Bradford, Pa.
Chicago Face Brick Association, Booths D119-140.

Hydraulic-Press Brick Co., Booths 32-33, Chicago.

Los Angeles Pressed Brick Co., Booth 56, Los Angeles, Cal.

Marion Brick Works, Booth 83, Marion, Ind.

Martinsville Brick Co., Booth —, Martinsville, Ind.

Western Brick Co., Booth 70, Danville, Ill.

Concessions.

I. Grasgreen, Chicago.
E. P. Hanafin, Chicago.
Joseph J. Howard, Chicago.
Mrs. V. DeVasconcellos, Chicago.

Publications.

American Architect, Booth 50, 50 Union Sq., New York City.
Architectural Record, Booth D30, Chicago.

Brick & Clay Record, Booths D115-117; 134-136, Chicago.

Myron C. Clark Pub. Co., Booth 133, Chicago.

The Clayworker, Booth D93, Indianapolis, Ind.

Dealers' Record, Booths 87-104, Chicago.
Engineering Record, Booth 55, Chicago.

Sewer Pipe.

American Sewer Pipe Co., Booths 165-166.

Clay Products Bureau, Booths D38-40, Kansas City, Mo.

Davenport Brick & Tile Co., Booth 100, Davenport, Ia.

N. A. Williams & Co., Booths 48-49, Chicago.

Tiling.

American Encaustic Tiling Co., Booths 154-155, Zanesville, O.

National Roofing Tile Co., Booth 191, Lima, O.

Pittsburg Tile Mfg. Co., Booth 174, East Liverpool, O.

Fire-Proofing.

Buckeye Fire Brick & Clay Co., Booth 71, Chicago.

Chicago Fire Brick Co., Booth 88, Chicago.

Current Co., Booth 169, Chicago.

Denison Fire Proofing Co., Booths 84-101, Mason City, Ia.

Dickinson Fire & Pressed Brick Co., Booth B163, Dickinson, N. D.

National Fire Proofing Co., Booths 151-152, Chicago.

Motor Trucks.

Diamond T. Motor Co., Booths 157-158, Chicago.

International Motor Co., Booths 187-188, Chicago.

H. Paulman Co., Booths 167-168, Chicago.

Wertzel & Peacock, Booths 170-171, Chicago.

Pottery.

Jean Boetter, Booth 189, Chicago.

Finfer Exhibit Co., Booths 161-162, Chicago.

Fulper Pottery Co., Booths 175-176, Flemington, N. J.

Peters & Reed Pottery Co., Booth 21, Zanesville, O.

Warsaw Modeling Co., Booth 153, Warsaw, Ill.

Accessories.

Allen Filtering Service Co., Booth 172, Chicago.

Brown Instrument Co., Booth 67, Philadelphia, Pa.

Ricketson Mineral Paint Works, Booth 164, Milwaukee, Wis.

Sasgen Bros., Booth B185, Chicago.

Southern Railway Co., Booth 156, St. Louis, Mo.

Associations and Organizations.

National Brick Mfrs. Assn., Booth D110, Indianapolis, Ind.

Building Brick Assn. of America, Booth 105, New York City.

Western Paving Brick Mfrs. Assn., Booth 109, Kansas City, Mo.

Illinois Clay Mfrs. Assn., Booth 15, Champaign, Ill.

Wisconsin Clay Mfrs. Assn., Booth D54, Madison, Wis.

National Paving Brick Mfrs. Assn., Booths D89-92, Cleveland, O.

International Bricklayers' Union, Booth 72, Indianapolis.

Iowa Clay Products Assn., Booths 94-99, Van Meter, Ia.

The Paving Brick Publicity Bureau, Booth D108, Chicago.

Chimney Brick.

Alphans Custodis Chimney Cons. Co., Booth 73, New York City.

Fridi & Flash, Booth 179, Chicago.

Clay Products—Miscellaneous.

Wm. E. Dee Co., Booths 41-42, Chicago.

W. S. Dickey Mfg. Co., Booths D20; 36-37, Kansas City, Mo.

Astrid S. Rosing, Booths 123-124, Chicago.

TRAINS BRING CONVENTION DELEGATES

Advance Guard to Conventions of National Brick Manufacturers Association Meeting and Other Sessions Arrives Early—Record Attendance Forecast



VERY incoming train bears delegates to the Twenty-seventh Annual Convention of the National Brick Manufacturers' Association and the meetings of the other national, state and district organizations, which convene Monday, March 3, at the Congress Hotel, Chicago.

The first arrivals reached Chicago, Saturday. On Saturday the arrivals were frequent and by Monday morning it is expected that more than half of the delegates will have reached Chicago.

Wednesday, March 5, when the first session of the N. B. M. A. will be held, it is confidently predicted that the register will show the largest attendance in the history of the organization, although it is probable that many clayworkers who are members of this organization, will have been in the city several days in attendance at the Exposition.

Mayor Carter Harrison will welcome the N. B. M. A. delegates at the opening session and the hospitality of the city thus offered will be accepted by Charles Deckman, of Cleveland, in behalf of the clayworkers. President Bloomfield, of the N. B. M. A., will follow with his presidential address and then will come the report of the committees and the election of officers and their installation.

There will be but one paper read at this session, and the convention will adjourn until the following day at 9:30 a. m.

Wednesday evening, the Ancient Order of Chaldeans, a newly organized secret society among the clayworkers, will hold its first meeting and the initiation of several hundred candidates will afford not only amusement but instruction, to those participating. The initiation will be followed by a buffet banquet—a cabaret and smoker being among the numerous entertainments planned for the visitors.

Thursday, the second day of the convention will be devoted almost exclusively to the reading of technical and commercial papers as will Friday, the last day.

The annual banquet of the N. B. M. A. will be held Thursday evening at 7 o'clock, in the Gold Room of the Congress Hotel. It will be preceded by an informal reception in the

Elizabethan Room, beginning at 6 o'clock. William P. Williams, of Chicago, will be toastmaster, and the usual quota of clever speakers will make this the crowning social function of the week.

The present officers of the N. B. M. A. are as follows:

President—C. A. Bloomfield, Metuchen, N. J.
First V. P.—W. H. H. Rogers, Rochester, N. Y.
Second V. P.—Eben Rodgers, Alton, Ill.
Third V. P.—C. P. Mayer, Bridgeville, Pa.
Treasurer—John W. Sibley, Birmingham, Ala.
Secretary—Theo. A. Randall, Indianapolis, Ind.
Assistant Secretary—A. M. Wallace, Indianapolis, Ind.

The state vice-presidents are:

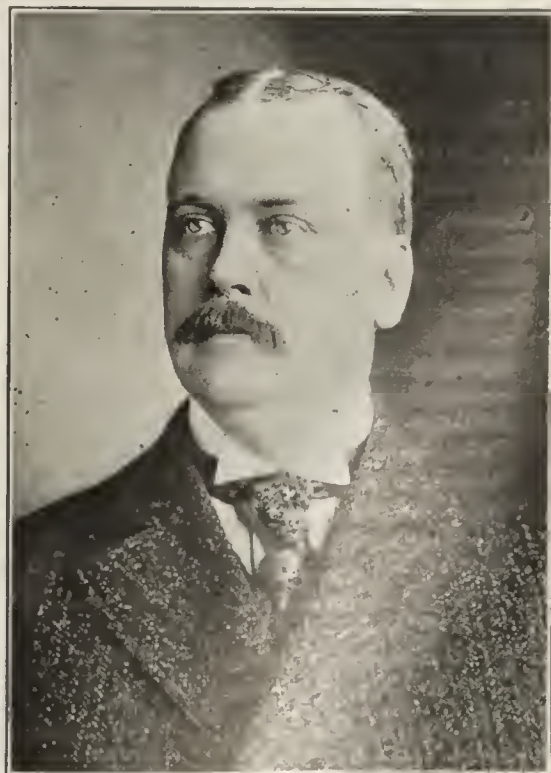
ALABAMA.	
J. M. Jenkins.....	Montgomery
CONNECTICUT.	
R. Clifford Merwin.....	New Britain
DISTRICT OF COLUMBIA.	
E. S. Morse.....	Washington
GEORGIA.	
George O. Berry.....	Columbus
ILLINOIS.	
J. W. Stipes.....	Champaign
INDIANA.	
Fred Adams.....	Indianapolis
IOWA.	
J. L. Stevens.....	Boone
KANSAS.	
W. G. Buckles.....	Coffeyville
KENTUCKY.	
H. W. Katterjohn.....	Paducah
LOUISIANA.	
F. Salmen.....	Slidell
MARYLAND.	
S. R. Busey.....	Baltimore
MASSACHUSETTS.	
E. L. Cook.....	Bridgewater
MICHIGAN.	
George Clippert.....	Detroit
MINNESOTA.	
W. Siwart Smit.....	St. Paul
MISSOURI.	
Robert Nesch.....	Kansas City
NEBRASKA.	
J. Fred Smith.....	Omaha
NEW JERSEY.	
Prof. C. W. Parmelee.....	New Brunswick



T. A. Randall, Sec. N. B. M. A.



C. A. Bloomfield, Pres., N. B. M. A.



J. W. Sibley, Treas. N. B. M. A.

SOME FAMILIAR FACES SEEN AT THE CLAY SHOW



A. W. Hilker, Treas., Wis. Clay Mfg. Assn.



Geo. H. Clippert, Clippert & Spalding Brk. Co., Detroit.



Walter Colyer, Sec., Albion (Ill.) Shale Brick Co.

- NEW YORK.
- Prof. Charles F. Binns.....Alfred
- NORTH CAROLINA.
- E. A. Poe.....Fayetteville
- OHIO.
- Orville N. Townsend.....Zanesville
- PENNSYLVANIA.
- W. M. Hodges.....Bradford
- TENNESSEE.
- T. L. Herbert.....Nashville
- TEXAS.
- Thomas M. Harwood.....Gonzales
- VIRGINIA.
- J. W. Davis.....Newport News
- WISCONSIN.
- George J. Schwarz.....Milwaukee
- The Committee on Technical Investigation is:
- W. D. Richardson.....Columbus, O.
(Term Expires 1917.)
- Prof. A. V. Bleininger.....Pittsburgh, Pa.
(Term Expires 1916.)
- Prof. Ross C. Purdy.....Worcester, Mass.
(Term Expires 1915.)
- D. V. Purington.....Chicago, Ill.
(Term Expires 1914.)
- Prof. Edward Orton, Jr.....Columbus, O.
(Term Expires 1913.)

The program for the entire three days' session of the N. B. M. A. follows:

First Session—Wednesday, March 6, 1913, 10 A. M.

- Opening prayer.
Welcome to Chicago by his honor, Mayor Carter H. Harrison.
Response by Charles Deckman, Cleveland, O.
President's Annual Address, Chas. A. Bloomfield, Metuchen, N. J.
Report of Treasurer, John W. Sibley, Birmingham, Ala.
Election and installation of officers and members of standing committees.
1. "The Field of Usefulness of the National Brick Manufacturers' Association," Prof. Edward Orton, Columbus, O.
Report of Committee on Technical Investigation, Ross C. Purdy, Worcester, Mass.

Second Session—Thursday, 9:30 A. M.

2. "Our National Fire Waste, Its Cause and Remedy," C. J. Doyle, Chicago, Ill.
3. "The Brick Salesman," Albert D. Klein, Baltimore, Md.
4. "Some Investigations of the Clay Products Section, Bureau of Standards" (Illustrated), Prof. A. V. Bleininger.
5. "Prevention of Whitewash," Charles Hoshour, Oklahoma City, Okla.
6. "Reminiscences of the Brick Business," C. H. Frost, Los Angeles, Cal.

7. "Electric Drives in Clayworking Plants" (Illustrated), Thomas E. Simpers, Pittsburgh, Pa.
8. "The Training of the Technical Engineer for Ceramic Service," Prof. H. K. Benson, Seattle, Wash.
9. "Fire Insurance for Brickmakers," Walter T. Campbell, St. Louis, Mo.

Third Session—Friday, 9:30 A. M.

10. "Some Peculiarities of Face Brick Manufacture," General Discussion led by Douglas Stevens, Cayuga, Ind.
11. "Competition and Co-Operation," M. E. Gregory, Corning, N. Y.
12. "The Business Man and the Trend of Modern Legislation," A. D. R. Johnson, Raleigh, N. C.
13. "Tests of Two Brick Piers of Unusual Size" (Illustrated), J. E. Howard, Washington, D. C.
14. "European versus American Methods of Manufacturing Clay Products" (Illustrated), G. W. Cronquist, Torekow, Sweden.
15. "Kiln Troubles and Remedies," General Discussion led by Anton Vogt, Peru, Kas.

Reports of Committees
Miscellaneous Business.

In addition to the foregoing addresses and papers, various questions pertaining to brickyard practice will be discussed.

N. P. B. M. A. CONVENES MONDAY MORNING. This Associated Organization Seeks to Bring About Closer Ties Between Members and Engineers.

The National Paving Brick Manufacturers' Association will be the first of the national organizations to convene. The opening session will be held Monday morning, March 3 and the meeting will continue two days. A closer relationship between the manufacturer and the engineer is one of the main questions to be discussed by the body. The program in full follows:

Monday Morning, March 3, 1913, 10 O'Clock A. M.

Calling the Roll of Membership.
Reading of Minutes.
Admission of Members.

Monday Afternoon, March 3.

President's Annual Address, Chas. J. Deckman, President.
Resume of Association Work, Will P. Blair, Secretary.
Publicity for our Product, H. H. McDonald, Assistant Secretary.

Tuesday Morning, March 4.

Reports of Officers.
Reports of Committees.
Appointment of Committees.
Election of Officers.

The Relation of the Trade Journal to Municipal Work, S. T. Henry.

Tuesday Afternoon, March 4.

The Psychology of Competition, E. L. Middleton, Chicago, Ill.

The Engineer's View, H. M. Waite, Chief Engineer, Cincinnati.

The Manufacturer—His Hindrance and His Aid, E. B. Schmidt, Asst. City Engineer, Louisville, Ky.

The Development of the Proper Relation between the Paving Brick Manufacturers as Represented by their Salesman and the Engineer in charge of Paving Work, E. P. Foster, Youngstown, Ohio.

Association Membership, Eben Rodgers, Alton, Ill.

Wednesday Morning, March 5.

Unfinished Business.

AMERICAN FACE BRICK ASSOCIATION.

Important Matters to Be Discussed at Meeting to Be Held In Chicago, March 6.

The program for the annual meeting of the American Face Brick Manufacturers' Association, which will be held at the Congress Hotel, Chicago, March 6, has been completed by President J. M. Adams of Columbus, Ohio.



J. Parker B. Fiske, Sec. Building Brick Assn. of America.

The meeting will be called to order at 9:30 a. m. Thursday, March 6, after which there will be a roll call of members. President J. M. Adams, Columbus, Ohio, will deliver his annual address, in which he will tell of the accomplishments of the organizations during the past year and make his recommendations for the future.

W. T. Campbell, manager of the Reciprocal Insurance Bureau of St. Louis, Mo., will talk on "Reciprocal Fire Insurance." Edward E. Gore, member of the firm of Barrow, Wade, Guthrie & Co., certified public accountants, of Chicago, will talk on "The Necessity for and Value of

Cost Accounting as an Aid to Successful Manufacturing." John H. Black, general manager of the Jewettville Brick Co., Buffalo, N. Y., will speak on "Distributing Agencies and Districting of the Same."

At the afternoon session Will P. Blair, secretary of the National Paving Brick Manufacturers' Association, Cleveland, Ohio, will speak on "The Value of Organization to the Brick Manufacturer." "The Value of a Freight



J. M. Adams, Pres. Am. Face Brick Assn.

Traffic Bureau to the Brick Manufacturer" will be the topic to be discussed by E. C. Clark, of the Kittaning Brick Co., of Pittsburgh. L. D. Binyon, president of the S. S. Kimbell Brick Co., Chicago, will speak on "Some of the Shortcomings of the Face Brick Manufacturer from the Dealers' Standpoint."

A number of important matters are scheduled to come before the meeting. There is some discussion of increasing the membership fee and in that way placing the association on a stronger financial footing. The question of establishing a freight traffic bureau to dispose of all matters of traffic will also come up for disposition.

B. B. A. PLANS LIVE ONE-DAY SESSION.

May Enlarge Its Field, to Take in All Clay Products in Publicity Movement.

The Building Brick Association of America will have only a one-day session. It convenes Wednesday, March 5, at 2:30 p. m. One of the most important subjects to be discussed will be the advisability of enlarging the field of the organization to include all clay products in the publicity work it has undertaken.

Only two papers are planned for the day. Arthur F. Woltersdorf, a prominent architect of Chicago, will speak on "The Advancement of Brick in Architecture." This is expected to be a real treat. The other paper is by Herbert N. Casson, who will talk on "The Greater Efficiency in the Sales End of the Brick Business." As this subject is one that appeals very strongly just now to the clayworker, and as Mr. Casson is a specialist on the matter, the address will doubtless be very profitable to all those who hear it.

MEETING OF AUXILIARY ASSOCIATION.

Many State Associations Will Meet in Adjourned Sessions During the Big Week.

There will be a number of auxiliary associations either holding annual meetings or adjourned sessions during the week. Among these are the National Clay Machinery Association, which convenes March 4-5, and the Canadian Clay Products Manufacturers' Association, which meets in an adjourned session March 6. The other organizations that will be represented here are:

- The Western Paving Brick Manufacturers' Association.
- The Eastern Paving Brick Manufacturers' Association.
- The Brick Builders' Bureau of San Francisco.
- The Northwestern Clay Association.
- The Chicago Face Brick Association.
- The Cleveland Face Brick Association.
- The Ohio Face Brick Association.
- The Ohio Tile and Clay Workers' Association.
- The Illinois Clay Manufacturers' Association.
- The Iowa Clay Products Manufacturers' Association.
- The Wisconsin Clay Manufacturers' Association.

Special days have been set apart for some of the state associations which have signified an intention to attend in a body. March 4 is to be "Illinois Day," honoring the Illinois Clay Manufacturers' Association. March 5 is "Iowa Day," March 6 "Wisconsin Day," March 7 "Minnesota Day." New York, Pennsylvania and Canada are to be assigned special days.

GOOD ROADS ADVOCATES BANQUETED.

Many Speakers Tell of Advantages of Good Roads—Brick Favorably Mentioned.

Despite the fact that Chicago was in the grip of the most severe blizzard of the winter the Fifth International Good Roads Congress held its annual banquet in the Blue Room of the Hotel Lasalle on the evening of February 26. Many prominent good roads commissioners were among the attendants. After an eight-course dinner the guests were entertained by a vocal selection by Enrico Palmetto, who has a fine tenor voice as well as being an ardent good roads supporter. C. W. Jackson, president of the National Good Roads Association, then informed the guests that Mr. Penfield, president of the Clay Product Exposition Co., who attended the banquet, had made arrangements to convey the entire crowd to the Coliseum, by taxi, in order that they might listen to an illustrated lecture on good roads and also be among the first to witness the splendid exhibits of the Clay Show, which opened that evening.

Mr. Jackson delivered the opening address at the Show and pointed out that permanent, good roads were absolutely essential from a business as well as a social standpoint. He stated that it was his belief that the Clay Show would help considerably towards bringing about better road conditions. He called attention to the fact that many brick roads which have been in use eighteen years fail to show the least degree of wear. He then introduced Mrs. Pennybacker, president of the General Federation of Women's Clubs, an organization of 1,000,000 women which has taken active part in the movement to secure good roads. Mrs. Pennybacker contended that there are two conditions which hinder good roads; first, the ignorance and indifference of the people and, second, the construction of roads that lack permanency.

G. Gordon Reel, Highway Commissioner of the state of New York, who in the past year has supervised the building of \$50,000,000 worth of good roads, took the floor and gave some interesting statistics relative to the cost and con-

struction of good roads showing the increase in value of the property fronting these highways. The next speaker, Thomas Tynan, warden of the penal institutions of Colorado, who is directly responsible for the construction of hundreds of miles of good roads in Colorado, by convict labor, who, on their word of honor, without guards, built these highways, gave a lecture generously illustrated, after which the guests spent the remainder of the evening inspecting the various exhibits of which the paving exhibit received the most attention.

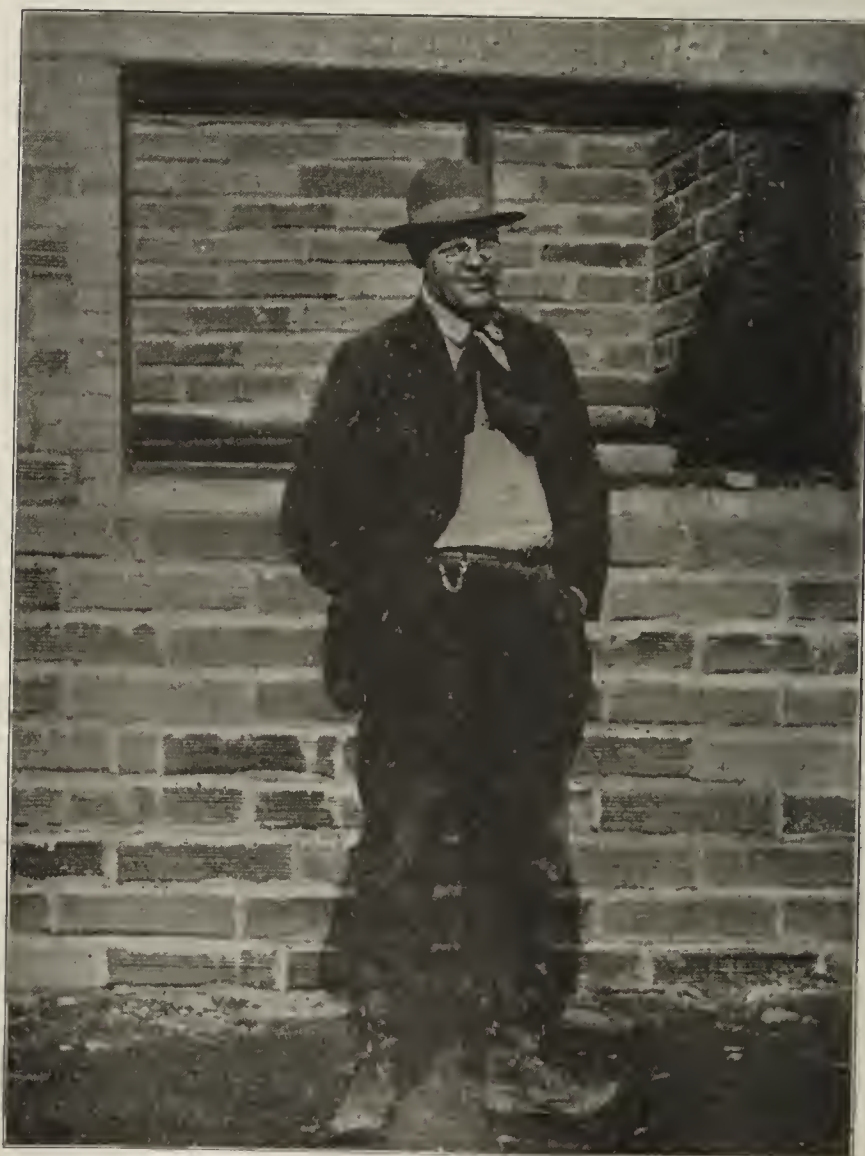
MEET TO DISCUSS DRAINAGE PROBLEMS.

Annual Convention of Iowa State Drainage Association Proves of Unusual Interest.

The annual meeting of the Iowa State Drainage Association, which was held in Fort Dodge, February 18 and 19, was a great success. The discussions were all vitally interesting, and were carried on with much enthusiasm. The attendance was good, many interested men from outside the state being in attendance. The citizens of Fort Dodge set out to make the convention a helpful and successful one, and they truly accomplished their purpose. Aside from other courtesies, the members of the drainage association were entertained at a "smoker" by the Commercial Club, which was thoroughly enjoyed by all.

The addresses were unusually interesting and valuable to every one interested in drainage. The association is planning to publish these papers in the form of an annual report.

The officers of the association were re-elected for the ensuing year as follows: H. M. Sparboe, of Webster City, president, and Prof. W. H. Stevenson, of Ames, sec.



Frank W. Darling, Vice-Pres. Clay Product Co., Supervising Construction of the Company's New Plant at Brazil, Ind., Which Will Soon be Ready for Business.

FORM SUPREME TEMPLE OF CHALDEANS

Founders Organize Head Lodge of the Clay Workers' New Secret Order—Hundreds Are to Be Initiated During the Clay Show



FOLLOWING the receipt of its charter from the Secretary of State, the Supreme Temple of the Ancient Order of Chaldeans was formally organized Friday evening, Feb. 28, at the Hotel Sherman. Immediately after the ceremonies and the election and installation of officers, Chicago Temple, No. 1, the first of the proposed temples, was instituted.

The first initiation of candidates into the mysteries of the Chaldeans will take place Wednesday evening, March 5, in the main banquet room of the Auditorium Hotel, when it is expected several hundred clayworkers will participate.

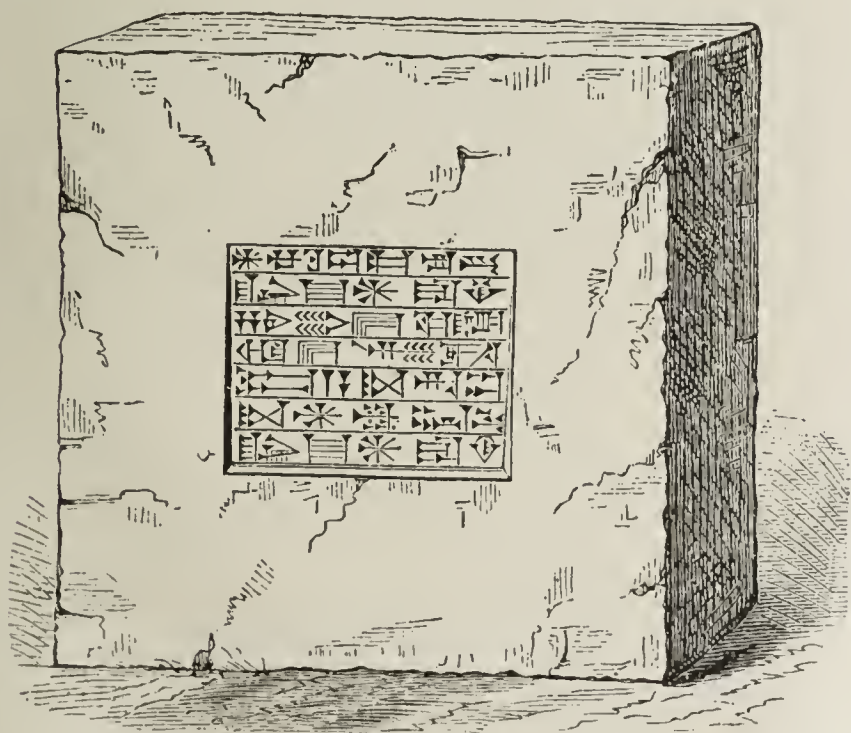
The initiatory ceremonies will be followed by a buffet banquet, a cabaret and a smoker, and the evening is expected to be one of the most entertaining during the eleven days of the Clay Show and the various conventions.

W. D. Gates, of the American Terra Cotta and Ceramic Co., of Chicago, was elected as the first Supreme Venerable Nebo. The other officers of the Supreme Temple are:

William Schlake, Supreme Learned Fo.
Joseph W. Moulding, Beloved Prophet, Ra.
F. W. Lucke, Supreme Philosopher, Ren.
Iverson C. Wells, Keeper of the Tablets, Mo.
Lewis D. Binyon, Keeper of the Shekels, Bo.
W. J. Gilbert, Chief of the Guards, Rab.

The appointive officers of the Supreme Temple have not been selected by Supreme Venerable Nebo Gates, but will be announced later.

The Supreme Priests, twelve in number, were elected as follows:



This is How the Ancient Chaldeans Made Brick, 3,000 Years Before Christ.

Charles B. VerNooy, Supreme High Priest; Lewis D. Binyon, H. G. Bowstead, E. K. Carmack R. M. Combs, James A. Hogan, Herman L. Matz, C. L. Rorick, H. H. Rosenberg, William C. Varney, Iverson C. Wells and F. G. White.

The Supreme Temple will have permanent headquar-

ters in Chicago. It is proposed to begin the institution of Local or Subordinate Temples immediately after the Clay Show and conventions, any city or a community, where a membership of twenty or more can be obtained, being eligible to make an application for a charter.

It is expected there will be considerable rivalry among many of the cities to obtain the first institutions, as the



This is the Sacred Symbol of the New Order. It Was Unearthed in the Ruins of a City in Chaldea Built 4,000 Years Ago.

Temple numbers will be issued in the order they are applied for.

Any state having three or more Local Temples will be entitled to a Grand or State Temple and already some of the states where there are active clayworkers' associations have served warning that they expect to organize the first Grand Temple.

The first Local Temple to be formed is Chicago Temple, as it was among its members the idea for the order was originated. An added necessity for the institution of the first Temple in this city was to fulfill its intention to entertain and amuse the visiting clayworkers during the Exposition and conventions. The officers of Chicago Temple No. 1 are:

Venerable Nebo, William P. Varney.
Learned Fo, H. G. Bowstead.
Beloved Prophet Ra, E. K. Carmack.
Most Wise Philosopher Ren, R. M. Combs.
Keeper of the Tablets, E. C. Kimbell.
Keeper of the Shekels, Bo, Herman L. Matz.
Worthy Rab, F. G. White.
Chief Archer.

The appointive officers have not been named by the Venerable Nebo Varney but will be announced later.

The above officers will give the Ceremony of Adoption to the 400 or more candidates that are expected to seek enlightenment into the mysteries of the Order. The ritual has been completed and copies of the same given to each member of the floor team. Despite the fact that most of the participants are also actively engaged in the preparations for the opening of the Clay Show, they promise to have their parts letter perfect by the time

the grand initiatory ceremonies occur Wednesday evening.

Those who desire to become members of the Chicago Temple should fill out application blanks and send the same, accompanied by \$3 for the initiation fee and annual dues, to Iverson C. Wells, Supreme Keeper of the Tablets, Chaldean Headquarters, Room 1154, Congress Hotel. These application blanks may be had at the Chaldean headquarters or a copy of the same can be had by referring to page No. 266 of this issue of "Brick and Clay Record."

Chaldeans also will be among the Convention visitors every evening at the Congress Hotel and will be recognized by the arm badges which they will wear. An appeal to them will also bring forth an application blank and any information desired about the new order.

The newly organized secret society starts off in a most encouraging manner and judging from the way the applications for adoption are coming in there will be a membership of several hundred at the first initiation.

During the past few days the applications have been coming in in liberal numbers, there being considerable rivalry among the clayworkers to become one of the first hundred members who will be entitled to be enrolled on the charter list. These first one hundred will have the added distinction of being members of the College of One Hundred Ancients.

In the election of officers Tuesday, at the closing session, there is not expected to be any material change as the association has done exceedingly valuable work under the present administration.

AFFINITY OF SHRUBBERY AND BRICK.

Prominent Brickmaker Urges the Importance of Verdure in Connection with Brick Architecture.

We are sure there are many who will regret that Mr. C. E. Poston, the well-known manufacturer of the "Poston-Oriental" and other varieties of rough faced brick, will on account of illness be unable to attend the Clay Show. The following interesting letter will furnish food for thought on the proper setting for the brick home;

Attica, Ind., Feb. 21, 1913.

Editor of "Brick and Clay Record"—Yours of 15th inst. at hand, asking for my picture for reproduction along with other clayworkers' in the "Brick and Clay Record." I thank you for the compliment very much indeed, but it happens that I haven't had a photographer take my picture for possibly thirty years. I am at present confined to my bed, by a prolonged sick-spell, and hardly think you would want any bed (not death-bed) scene. The best I can do, then, is to send you a small "snap-shot," taken out on the lawn where I was admiring a group of my shrubbery in bloom.

Speaking of shrubbery, I wonder if we give this matter the attention it should have, in connection with exploiting brick for homes? There is such an affinity between burnt clay and verdure that one is absolutely essential to the other in effecting the blending which brings the house and nature together in a harmonious way. We re-hang and change the groupings of the pictures on the inner walls of our homes; as great a pleasure can be found in making pictures of shrubbery and vines on the outer walls.

Brick manufacturers are today making brick that appeal very strongly to the artistic sense and I believe that home building is going to take its rightful place in the expression of a higher appreciation of the beautiful, and that the home-builder will study all the essentials that enter into giving his abode a fine outside appearance. Therefore, he will learn

that vines will not cling to wood; that shrubbery does not look well against painted weatherboards. He will observe that when the owner of a frame house has to repaint his home it is necessary to have the vines removed, which only a year or so before the tasteful wife had labored to fasten to the house. Moreover, what a settled happiness exists between a clinging vine and the brick wall, renewing their friendly embrace more firmly each year.

Architects have grasped the possibilities of the modern brick; ably written articles have appeared from time to time in our architectural and brick journals, setting forth the heretofore undreamed of combinations of color and shading to be had with the brick of today. The men who study and handle these things know, but have we made the right effort to acquaint the public?

I wish I were able to produce colored illustrations of houses faced with rough surfaced brick, some with, and



C. E. Poston, Attica, Ind., Inspecting Shrubby in His Yard. Note the Brick Garden Walk and the Brick Wall in the Background.

others without the shrubbery and vine "attachments" to show the difference between the "naked" and the "clothed." What a delight it is to note that architects in submitting plans for the house surround the perspective with artistic plants, vines and shrubbery. They realize the importance of the setting for the house, and show a knowledge of the same, even to the grouping of the shrubs and trees—round-headed and spreading shrubs and the smaller trees with, at the right place, one or more spiral-shaped trees piercing through and above, to give spirit to the whole scene.

I shall not be able to attend the coming Clay Products Show and my disappointment grows keener as the date draws near. I send greetings and wish everybody an enjoyable and profitable time.

Yours very truly,

Clarence E. Poston.

BRICK CO. TO SPEND \$100,000 IN PUBLICITY

Hydraulic-Press Brick Co., Launches Greatest Advertising Campaign in Industry's History—Covers Entire Country

By WILLIAM H. BURQUEST



AN advertising campaign of national scope which will involve the expenditure of \$100,000 has been recently launched by the well-known Hydraulic-Press Brick Company of St. Louis. In this gigantic coast-to-coast movement to boost the sale of the firm's products under the trade name "Hy-tex" through such national mediums as the "Saturday Evening Post," "Literary Digest," "Review of Reviews," and more than a score of other big publications, including trade journals, the company joins the ranks of the leading advertisers in modern industrial life.

The concern will probably carry on the most extensive advertising campaign thus far attempted among brick manufacturers. The record for the largest advertising appropriation ever set aside, in the past, by any one brick concern was held by Fiske & Company of New York and Boston. This firm is said to have expended about \$15,000 in class publication advertising only. And now, along come the "Hy-tex" people with a big scheme up their sleeves in brick advertising, and the essence of that scheme is this—"educate the consuming public to a full realization of the superiority of brick in building construction." But in order to reach the people of the nation, the company realized that it must advertise in the standard magazines of the day, which the people read, and thus strive to make "Hy-tex" a household word in the best sense, and so create a public demand for brick products as a preference in all styles of buildings.

It was after the first of the year that George A. Bass, president of the Hydraulic-Press Brick Company, made up his mind to enter upon an advertising movement of nation-wide character which would reach men in every walk of life. In the exhaustive deliberations of the company before entering upon this campaign, they went into the whole subject of the science of advertising, and they thoroughly assured themselves in their investigations that the step they were considering was an eminently wise one.

The Dunlap-Ward Advertising Company of Chicago will direct and have full charge of this advertising movement, which will begin to make itself felt for the first time in the March numbers of the national magazines. The advertising copy will be strikingly attractive. Every effort will be put forth to make the ads tell a story that will fascinate and appeal to the reader's eye and mind. Half-tone cuts of brick structures of all kinds will be used in the series of ads to be run. The famous "Blackstone red" is a "Hy-tex" color, and will form one of a complete series of art bricks for special advertising in high-class publications. Every demand from brick-users will be met from the twenty-two plants of the Hydraulic-Press Brick Company, and their distribution facilities, it is said, will be such as to enable the company to cope efficiently with all problems of speedy transportation as the demand for the firm's three hundred different kinds of face brick increases.

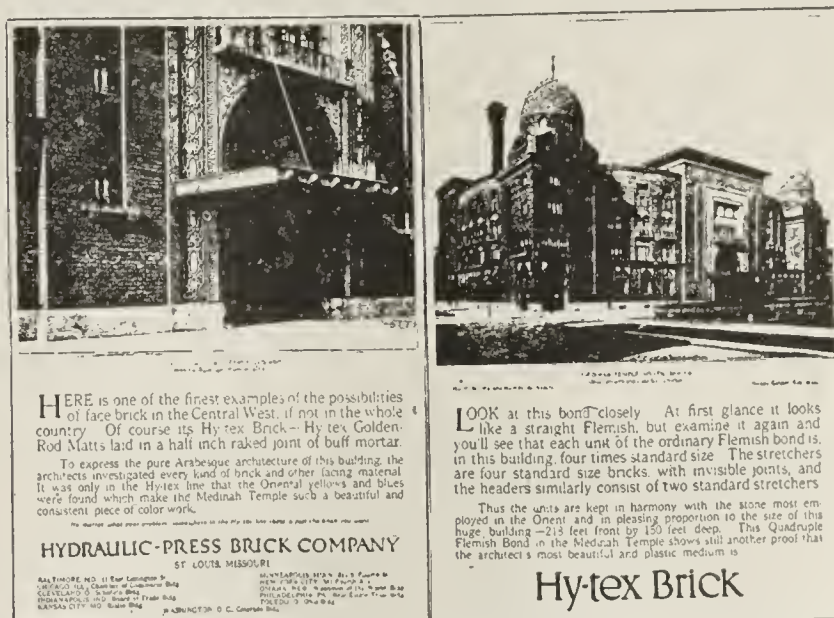
Campaign to Be Broad and Comprehensive.

"We are not using any space that will not dominate the page of any magazine of national caliber," said M. E. Sands of the Dunlap-Ward Advertising Agency. "Our campaign will be broad, comprehensive and thorough

from start to finish. We will spare no pains to put out brick advertising copy that will make a solid and powerful appeal. Today, nobody denies that in practically all other lines of manufacturing, the most successful concerns are those that advertise. The most successful automobile manufacturers are those that advertise. The most prosperous soap makers are the biggest advertisers in their particular line. And so with many other branches of manufacturing.

"And now at last one big manufacturer of brick has come to the full realization that brick is no different, as regards publicity, than are these other unrelated lines. Brick is essentially beautiful, and it is essentially useful. That is all a product needs to make it advertiseable. The big curse of brick manufacturing has been price-cutting, and yet the whole matter of getting and maintaining a standard price lies in this question—'to what extent does the consumer want the product?' By creating a big demand for brick through the right kind of advertising the matter of a standard price will take care of itself. It will tone up the whole price situation.

"The only means of realizing maximum profits from sales," continues Mr. Sands, "is by controlling them to



Miniature Reproduction of Two-Page Ad, Showing the New Medinah Temple, Which the Hydraulic Press-Brick Co. is Running in Popular Magazines.

every point of last consumption. That is possible only through the widespread public knowledge and demand which can be created only by ADVERTISING. Don't allow yourself to underrate the full importance of going to the consumer direct. Maintaining the price is simply a question of how much the buyer desires the goods. Manufacturers are often apt to confuse maintenance of price with restriction of output. Without any regard to this, the relation of maintenance of price to restriction of output is an economic question. Advertising, by arousing the most powerful desire possible for the products, is the one means of solving the question in favor of maximum profits.

"Such advertising as this cannot primarily take business away from competitors. In experience as well as in theory this advertising will be found to have a primary

effect of increasing consumption by 100 per cent. It will not be good advertising unless it takes advertising away from competitors, but it must just as inevitably open up to them new orders which would not have existed but for this very advertising."

Western officials of the Hydraulic-Press Brick Company are a unit in declaring that the firm will welcome and expect other manufacturers to enter the field of consumer advertising, using such mediums as are adapted to their distribution. They will welcome their advent into the ranks of advertisers, because they will also be creating more new sales rather than taking away orders—they will be sharing with the Hydraulic company the very high cost of educating the public as to the tremendous advantage of using brick for building purposes. Such education of the

movement. They point out that in the past there has been considerable misconception on the part of brick manufacturers concerning the real nature of ADVERTISING, or they would have been liberal users of more branches of it long before this.

On the other hand, advertising agencies also declare that the brick men have always been advertisers, because any man in business who pushes sales is an advertiser. They declare that advertising is primarily any means of calling attention to one's wares, and for any firm in the business of selling to deny that it is an advertiser is the same as for a man to claim that he is alive but not breathing. The question, according to progressive advertising men, is not whether **you will advertise**, but **how you will advertise**.

"That particular kind of advertising which makes for the education of the consuming public by printed announcements is intensive and extensive salesmanship of the highest order," says a member of one of the great western advertising agencies.

"It intensifies the work of your salesmen by relieving them of a large part of the time demanded for education and explanation; it extends your whole field of sales to the widest limits of use and of territory. It is the privilege and function of this kind of advertising to tell the means of filling a need wherever that need is felt, as well as to name the need where, before, it was only dimly felt or totally unrecognized."

TEXAS BRICKMAKERS DISCUSS LIEN LAW.

Action Taken at State Association Meeting Held at Dallas to Have Law Changed.

A meeting of the Texas Brick Manufacturers' Association was held at Dallas, Feb. 12-13. The main object of the meeting was to plan for securing changes in the Texas laws affecting material men's liens, which are declared to protect inadequately the interests of the manufacturers and distributors of building materials. Officers were elected for the Texas Brick Manufacturers' association and a meeting was set for March 24 at Austin, by which time it is expected that a bill will have been formulated and prepared for submission to the state legislature.

Schuyler Marshall of Dallas acted as temporary chairman of the meeting and officers were elected at follows: C. W. Martin of Fort Worth, president; G. W. Vaughan of Seguin, vice president; T. M. Harwood of Gonzales, secretary and treasurer. These officers will be ex-officio members of the executive committee, which will have the following additional members: W. H. Pugh of Marshall, Ralph Root of Fort Worth and Grover Cole of Ferris.

The executive committee is expected to take up for consideration, the possibility of getting the law changed in such a manner as to make material men's liens more binding. It is complained that under the present laws certain provisions of the homestead law conflict with the real rights of material men, both as to actual homesteads and business homesteads, and it is often impossible to provide liens that will insure the collection of the full value of materials furnished. Also the law holds the owner of the building liable only up to the contract price, even though materials alone may run above that amount, and this is declared to cause losses to the men who furnish building materials.

By the terms of the will of Oscar T. Tamm, who died at San Antonio, Tex., Feb. 1, the greater portion of his estate, estimated at \$100,000, is to be devoted to the construction of good roads.

Superlative Beauty

Is Not A Matter of Cost—
Hy-tex proves it

Hy-tex Brick

with its pliable, soft-colored units gives more beauty and individuality to a wall than is possible with any other material. You know the discoloration of stucco and the frailty of wood. Then reflect on the *permanence* of Hy-tex—its elimination of painting and repair costs! To make any judgment fair to yourself you need our new booklet "Genuine Economy in Home-Building." Send for your copy today—a postal will do.

HYDRAULIC-PRESS BRICK COMPANY

Dept. A, ST. LOUIS, MISSOURI

CHICAGO, ILL. Chamber of Commerce Bldg. MINNEAPOLIS, MINN. Security Bank Bldg.
CLEVELAND, O. Schofield Bldg. NEW YORK CITY, 381 Fourth Ave.
INDIANAPOLIS, IND. Board of Trade Bldg. OMAHA, NEB. Bee Bldg.
KANSAS CITY, MO. Gumbel Bldg. PHILADELPHIA, PA. Real Estate Trust Bldg.
WASHINGTON, D. C. Colorado Bldg.



One of the Attractive Ads in the Hydraulic Press-Brick Co.'s Series.

public, it is pointed out, will certainly mean greatly increased output, and even more surely will mean increased prices.

Movement a Sign of the Times.

Prominent advertising experts look upon the decision of the Hydraulic concern to advertise on a huge scale as a healthy sign of the times in the manufacture and sale of brick. They agree that it is a truism that every brick company in America will benefit by this big advertising

LARGEST RAILROAD OFFICE BUILDING

To Insure Safety of Employees and Valuable Papers, Chicago, Burlington & Quincy Railway Company Builds Fire Proof Structure of Burned Clay.

By WARFIELD WEBB



CHICAGO, according to George Fitch, is one of the greatest feats ever performed by the human race, and though little more than seventy-five years old, she is recognized throughout the world as a leader in many lines. She is known far and wide as a railroad center. Thirty-three railroads end in the city and five hundred passenger trains enter the city each day. Here many of the roads maintain their head offices, therefore it is a natural sequence that the largest railroad office in the world should be erected in the City by the Lake. This building, recently completed by the Chicago, Burlington & Quincy road, in conformity with the latest and most approved designs for such buildings, is largely a structure of clay products, architectural terra cotta and enamel brick being much in evidence. Located just off the Chicago river, at the corner of Jackson boulevard and Clinton street, it is the first skyscraper to grace the great West Side. Although sixteen stories high, it required, allowing for weather delays, only about fifteen months' time to complete the building, making a building record well worthy of notice.

The architects for the building were Marshall & Fox, who have planned many of Chicago's skyscrapers, and



Terra Cotta Detail, Furnished by the Northwestern Terra Cotta Co. for the New C. B. & Q. Office Building.

the plans were made with special care to make it a practical and ideal structure which would allow for the expansion of the business of the road. It is of the Gothic style of architecture, though not pure Gothic, being a blending of the pure and the modern style, the result being a very attractive and dignified edifice. It has a floor space of 225,000 square feet, and cost approximately \$2,000,000. It houses, at the present time, about 2,500 employees.

The front and sides of the exterior are built on a red granite base, the walls above the first floor being of white enamel terra cotta, the latter manufactured and set by the Northwestern Terra Cotta Co., Chicago. The rear



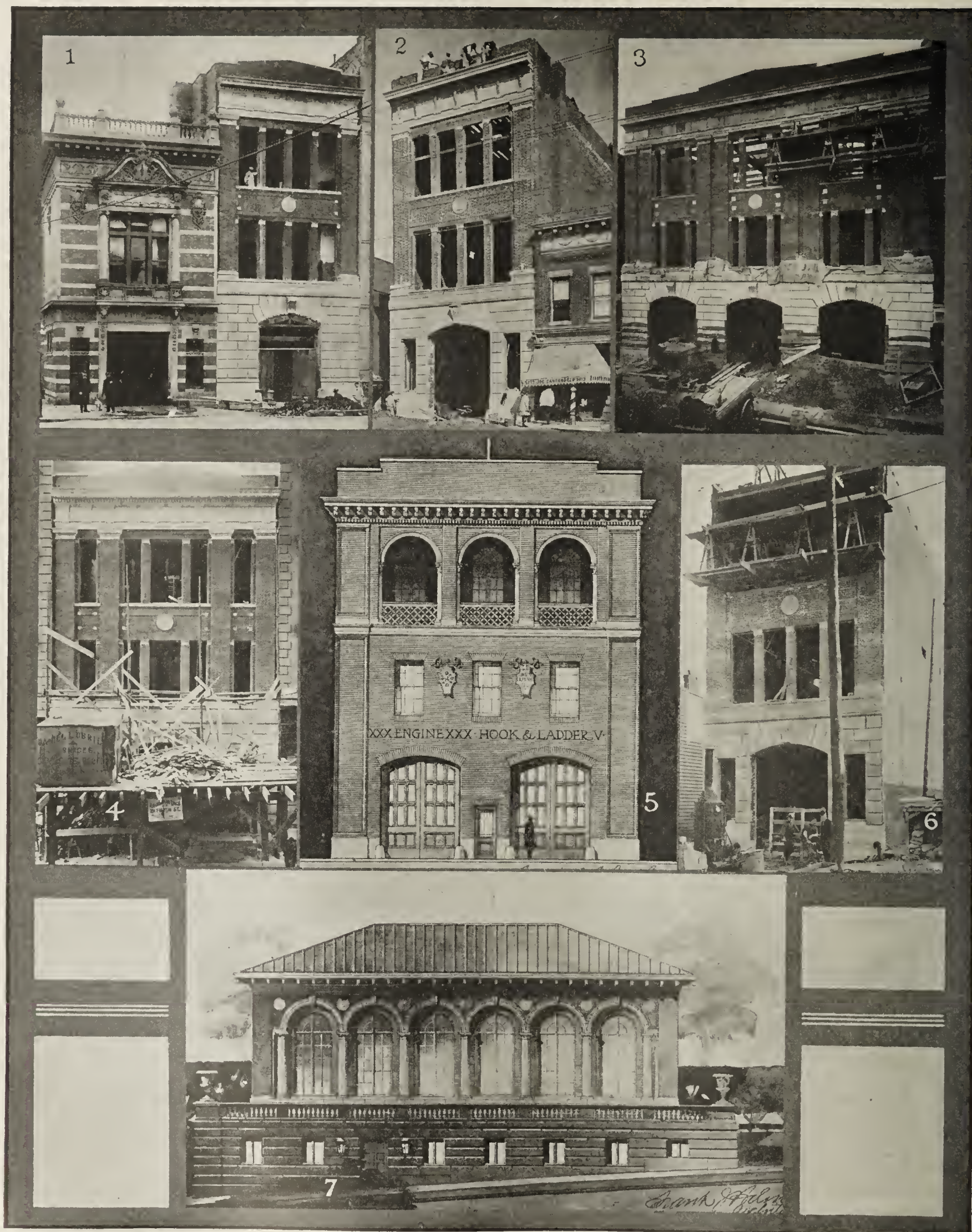
Splendid New Office Building Which Houses 2,500 Employees of the C. B. & Q. Railroad. At the Left is Shown One of the Terra Cotta Details Which Ornament the Structure.

walls of the building are faced with Tiffany white enamel brick, of which there were a million used, furnished by the Thomas Moulding Co., Chicago. The building stands high enough to be seen for a mile or more, its white walls glistening in the sunlight like alabaster. A large quantity of fireproofing and building brick were used, the brick being supplied by the National Brick Co., Chicago, and the hollow tile fireproofing by the National Fire Proofing Co., of Pittsburgh and Chicago. All of the brick and hollow tile work was done under the supervision of James Stewart & Co., Chicago contractors.

One of the most attractive features of the building is the main entrance, which with its tall ceiling and finish of white enamel terra cotta, in Gothic style, strongly resembles a church entrance. With the exception of the northwest corner of the ground floor, where a bank will be located, the entire building will be occupied by the C. B. & Q. R. R. for office purposes.

There are several unique features in connection with the building that deserve special mention, these being the ventilating and lighting systems. The former is a

NEW YORK FIRE HOUSES—MONUMENT TO CO-OPERATION



Above are shown a few of the forty-five fire houses in various stages of construction in New York City. They were originally planned to be constructed entirely of concrete, but due to the vigorous work of the Greater New York Brick Co., the plans were redrawn to let brick in. No. 1 is located at Prospect Ave. and 152nd Ave., Bronx. No. 2 at 7th Ave. and 50th St., Brooklyn. No. 4 at Fulton St. near Church, Manhattan. No. 5 at S. W. cor. Seneca Ave. and Falle St. No. Y at Knickerbocker Ave. near Gates, Brooklyn. No. 7, fire alarm and telegraph station, at Crotona Park, Bronx. What has been done by New York brick men can be done in other localities by taking energetic measures when contracts for public buildings are being let.

new system, gleaned from all the latest devices for solving the question. The windows will not be opened either during warm or cold weather. Fresh air will be provided by the circulation of washed air through ventilators, the air being changed every ten minutes to insure its purity.

The indirect lighting system was adopted only after a thorough and careful examination had been made of all the latest systems known. The system provides for ample and perfect lighting, a most essential and important item to the many employes. Rest rooms are provided for the employes, with lady attendants for the women's quarters. The water supply will be filtered in a private plant in the building. The system of telegraphing will likewise be unique and will save many useless steps and in other ways save time and labor. Pneumatic tubes will carry messages from floor to floor and add much to the facilities for rapid work.

Taking the building as a whole, it marks an advance in this type of business structures, and the extensive use

of burned clay is evidence of the importance which is attached to having these structures made absolutely fire-proof in order that the many employes engaged in their daily duties, and the masses of valuable records that mean much to a railway company, may be housed in a manner that will insure their safety from loss by fire.

The appearance of security that marks buildings constructed of burned clay materials has by the test of fire and time been found to be well founded. Conflagrations which have visited several of our large cities during the past few years have served to demonstrate that buildings constructed of burned clays were able to cope with flames and builders are profiting by the expensive lessons gained by these disasters. Such buildings as the Burlington office are a further demonstration of the value of burned clays to the building industry, for without hollow tile for partitions, floor and ceiling lining, the modern skyscraper would be practically impossible.



CO-OPERATION RESULTS IN BIG BOOST FOR BRICK



ET him who doubts the value of co-operation in selling brick, whether common, front or glazed, examine the illustrations, opposite, and then ask himself why the same thing cannot be accomplished in his own home town, by judicious efforts directed along proper channels.

Early in the year 1911 the New York Fire Department advertised for bids for twenty-one fire houses. The specifications called for concrete construction. It looked like a splendid plum for the cement and concrete construction interests and bids began to roll into Commissioner Johnson's office to the tune of several million dollars. But just before these tenders were opened, there came out of the depths of 103 Park avenue, which is the lair of the Greater New York brick lions, a roar of protest that was at once both loud, deep and long. It was the voice of the new brick selling combination, recently established in New York perpetually volplaning its protests in the interests of union labor and the taxpayers' pocketbooks against any such discriminating plan which would countenance for a moment the banishment to outer darkness of such an important building commodity as brick.

The gladiator in question was no less a personage than Senator John B. Rose, president of the Greater New York Brick Company, backed by seventy-five per cent or more of the brick manufacturers up the Hudson, where some of the biggest brick-raising farms in the country are located, backed by the farmers themselves.

It was the first outward visible sign of the inward strength and power of Eastern brick producers en masse. The advisory part of the program was personified by the occupant of an office down in the financial district of Gotham, one Frank M. Patterson by name and fame, and the upshot of the campaign was the readvertising of bids for the erection of the buildings in which brick as well as concrete and stone would be used. The result was that millions of brick, both common and front, were used in these buildings, and instead of all the contracts being let in a bunch, twenty-one of the forty-five authorized were let at different times.

Senator Rose, speaking of the profitableness of this

campaign to the Eastern clay industry as a whole, said:

"Last year the manufacturers of the Hudson valley determined that they would begin a campaign of publicity; notwithstanding the fact that they had gone through two years of hard times. They raised \$5,000 for immediate needs and pledged to the committee such other financial assistance as might be required, provided, of course, the original investment demonstrated the wisdom of the plan.

"We found we had a serious problem right at the start. Under a proposed act of the legislature, a new charter for the City of New York was authorized and a committee had been at work upon the draft in anticipation of the enactment of this law. An inspection of the proposed code revealed the fact that some one had curiously left out the word 'Brick' in the construction of piers, footings and in certain walls—that concrete or some other substitute was specified. This meant a difference of brick consumption in this city of 500,000,000 instead of a billion or more.

"That code is still in course of revision, but had it been passed at the time (and it is very much alive yet) and had that defect not been discovered, the brick industry of the East would have suffered enormously. Doesn't that look as though co-operation and publicity paid?

"The next proposition we faced was the fire house bids, and we succeeded in having them redrawn and readvertised so as to let brick in and the result is the handsome houses which are being erected all over the city. After that came one of much larger proportion, pertaining to the subways. We got concessions there, too."

These houses were erected for the accommodation of the new automobile fire fighting apparatus. Instead of stalls they have runways so that the machines can have a good start and facilitate cranking. They are in con-model and motorize the entire department.

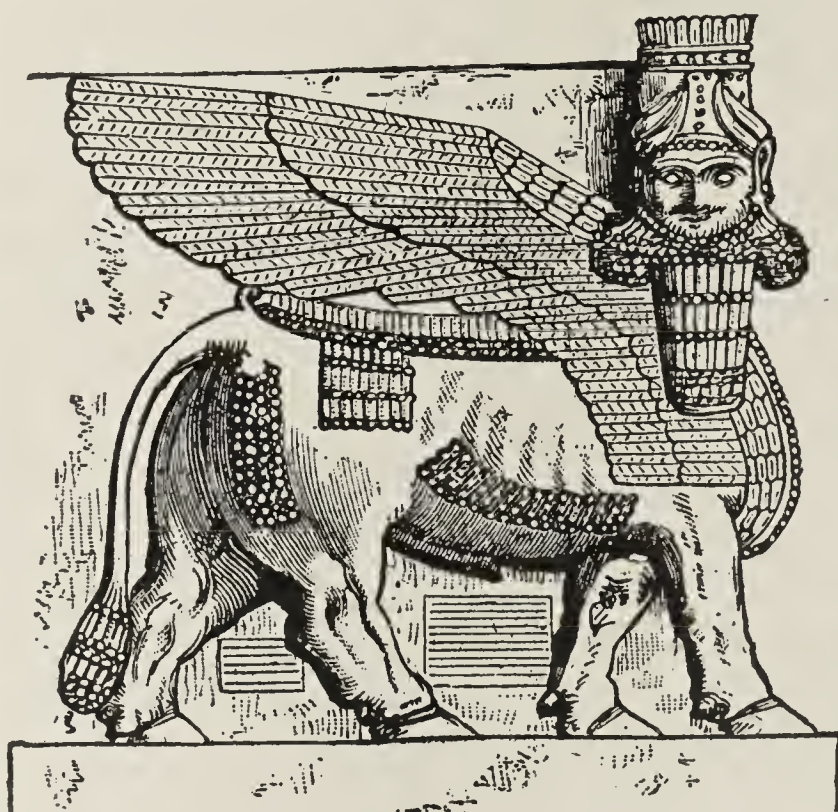
Conformity with the plans of Commissioner Johnson to re-Different kinds of front brick, common brick, and fire-proofing material were specified by the architect, Frank J. Helme, of Brooklyn, but the fact remains that had it not been for the co-operation among the brick men, concrete would have been used entirely.

Clayworkers

Become Members of

The Ancient Order of Chaldeans

—
—
This is the
Sacred
Symbol
of the
Chaldeans
—
—



—
—
This Image was
found in the
Ruins of a City
that existed
4,000 years be-
fore Christ
—
—

—
—
It was made of
Terra Cotta
—
—

This is a secret fraternal and social organization which will be formally organized with a grand initiation of several hundred candidates on the evening of Wednesday, March 5, at the Auditorium Hotel, Chicago.

The lesson it teaches is founded on the story of the oldest civilized people of the world—the Chaldeans—who lived in brick houses, walked on brick streets, wrote on clay tablets, ate from clay dishes and cooked in clay utensils nearly 4,000 years before Christ.

The purposes of the order are to encourage the spirit of Fidelity, Fraternity and Forbearance, and any reputable Clayworker or member of the allied industries is eligible to membership.

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

SIGN THIS APPLICATION

If You Want to Become a Member
of the First Temple of

The Ancient Order Chaldeans

And Take or Send it to the Address Given Below

F. F. F.

APPLICATION

IVERSON C. WELLS, Supreme Keeper of Tablets,
Room 1154, Congress Hotel, CHICAGO

I enclose \$3.00 as initiation fee and desire to be considered as an applicant for adoption into the mysteries of the Ancient Order of Chaldeans. I am connected with the Clay Industry or its allied interests.

Name? _____

Age? _____

Residence Address? _____

Business Address? _____

Occupation? _____

Employer? _____

Name of Firm or Business? _____

Are You an Employee? _____

By Whom Employed? _____

How Long So Employed? _____

Indorsed by: _____

(Signature) _____

Date of Application _____ 1913.

EDITORIAL SECTION

Volume LXII. CHICAGO, MARCH 1, 1913 Number 5.

CHICAGO'S WELCOME TO YOU.

Those of the clay-working industry whose interests are in Chicago or the territory adjacent, extend the heartiest of welcome to the visiting brothers at the various conventions and the Exposition.

These clay-workers feel a personal pride in the success of the Second Clay Show, as reflected in the first days of its existence.

While the major portion of the actual work has fallen on the shoulders of a few, as it must needs do, every manufacturer has done his share towards contributing to its success, and in that measure, must be given full credit.

Chicago does things in a big way when it starts out. That is the reputation of the City and its business men.

Some other city may have done just as well with the Exposition, but there is **NONE** that **WOULD** or **COULD** have done better.

It is safe to say, therefore, that the first two Expositions will long be a precedent for others to follow.

We have tried to make this so.

We have attempted our **BEST**.

True, there are many things that could have been improved upon, undoubtedly.

And there will be future shows that will profit by these errors of judgment.

But, withall, Chicago and its clayworkers have done well. They have established a precedent and it is now up to the clayworkers of the Nation to see that this precedent is at least equalled.

This is the last time for several years, probably, we Chicagoans will have you visiting clayworkers with us on an occasion like this.

You have honored us by holding two of your National conventions here in consecutive years.

You have honored us by indorsing the decision to let the first two Clay Shows be held here where the original idea was given birth.

There are other cities that want the same honors and who deserve them.

We must consider these cities.

We are glad to have you with us and, if it were not for the selfishness of it, we would say we would like to have you come annually and let us play the host to you perpetually.

But that would be **UNFAIR**.

We must, therefore, be content with your generosity and we **ARE**.

Perhaps some day, in the not far distance, it may fall to our lot to have you with us again.

If that time should come you can rest assured we shall excel our past efforts to entertain you and boost your products—if we **CAN**.

Again, we say, "Welcome to our Midst!"

May you have a good time and a profitable time. The city is **YOURS** to do as you please with.

If you do not get what you **WANT** tackle the first fellow that wears a reception badge or the Chicago Clay Club insignia and you speedily will be placed on the right track.

THE SHOW AND CONVENTIONS.

As this issue of "Brick and Clay Record" goes to press the Second Annual Clay Show has been in progress two days and delegates from all over the United States are arriving to be in attendance at the Twenty-seventh Annual Convention of the National Brick Manufacturers' Association and the other National and State organizations, which convene Monday morning, March 3, and continue the remainder of the week.

In accordance with the predictions made in these columns the attendance of the visitors at the Coliseum show has been greater on the first two days than last year and this increased interest indicates that every expectation will be fulfilled.

The advance guard of delegates to the conventions also assures the fulfillment of the prediction that there will be a greater membership present this year than at any other time in the history of the clay product industry.

These two encouraging signs, coupled with the extraordinary display of clay products at the Exposition, augur well for the industry.

In no other industry has there ever been such a great publicity movement.

From Coast to Coast and from the Gulf to the Lakes, burned clay has been heralded through the press of the Nation as the leading building and construction material.

No other industrial show—and not an exception is made, has presented such a stupendous showing of manufactured products.

With an expenditure of more than \$2,000,000 in preparing for this great Exposition the Clay Show far exceeds any other industrial effort to attract the world to its products.

With exhibitors, not only from every state in the Union, but from many foreign countries, no other industrial exposition has been able to equal the Clay Show in the number or variety of exhibits.

The Exposition is a great attestation to the products it is boosting.

Thousands and thousands of visitors will return to their homes to ponder over the problem of building material as they never have before.

Thousands and thousands of visitors will have been educated to the possibilities of burned clay and many thousand prospective home builders will insist that it be used when the architect draws up the specifications and plans.

The practical good the Clay Show has done and will continue to do is immeasurable.

It has been a great undertaking but a most profitable one.

And may the institution be perpetuated that the Nation may be further educated to burned clay.



**QUESTIONABLE
PUBLICITY
METHODS.**

Much is being made over the "Paving Determinator" exhibited at the recent cement show in Chicago—that is by the cement interests.

The publicity man of the cement people has been a very busy man ever since the exposition.

The alleged tests, which, of course, showed vitrified paving block to be the **POOREST** wearing material of all and concrete the **BEST**, have been exploited in every avenue of publicity to which he has access.

Pictures of the "Determinator" and column after column of rosy-hued descriptive matter have been given to the trade papers and general press.

And it is perfectly natural that there will be many who saw the "Determinator" at the Coliseum, or who have read of its "tests," who will believe it told the truth.

The apparatus was a clever publicity stunt.

It was more than that—it was an ingenious contrivance.

And, in the very ingenuity of its construction and the manner in which the "tests" were made, it actually made "black to appear as white," so far as the uneducated public was concerned.

There is no unbiased engineer or contractor, who is familiar with paving materials, who pretends to say that concrete highways compare in any way with vitrified paving block in wearing qualities.

There may be some that will argue against it on the first-cost line, because those whom they serve consider first-cost rather than the future expense.

Still, if we must believe the "Determinator," brick is the **POOREST** wearing material of all and concrete the **BEST**!

It doesn't take a mathematician to figure out the solution to this little problem.

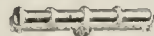
If vitrified paving block stands the actual test of

time on a real highway and concrete **FAILS**, then there is something wrong with the "Determinator."

Either the machine itself is so ingeniously contrived as to place brick at the greatest disadvantage and concrete at the best, or the poorest of rejected paving block and the very best of concrete are used.

It so happens that **BOTH** these explanations are correct.

And this being true, isn't the publicity method used rather **QUESTIONABLE**, to say the least?



**AN
OPPORTUNITY
WORTH
WHILE.**

Paving block manufacturers of Illinois here is an opportunity to show that you are "on the job" like the concrete fellows.

Down in La Salle, Ill., the Board of Highway Commissioners has been awakened to the realization that it is somewhat behind in permanent roadway construction.

This awakening followed the recent Springfield Good Roads Convention, which goes to prove that these good roads movements are a **GOOD** thing for the paving interests that **TAKE AN ACTIVE PART** in them.

Mayor Thomas Doyle, of La Salle, headed a delegation from his city which applied to the Illinois Highway Commissioners for a conference on the proposition to build a permanent roadway from the Rock Island depot in La Salle to a point one mile south.

Plans and estimates were prepared by the State Highway Engineer and laid before the La Salle Highway Commissioners Feb. 3.

This action was the signal for the concrete fellows to get busy.

They saw that there was a great opportunity to receive a boost for their material under the most favorable conditions.

They figured that one mile of sample road was going to bring them many miles of future contracts in that section, especially as long as there were no **BRICK** roads there for comparison.

What happened?

The Joliet Sand and Gravel Co., of Chicago, consented to furnish the necessary gravel free—about 2,800 tons.

The Marquette Cement Co. and the Chicago Portland Cement Co., both of Chicago, displayed a similar interest and have agreed to supply 26 car loads of cement.

The American Sand & Gravel Co., also of Chicago, entered into the spirit of the plan and offered 54 car loads of sand.

As has been said, the La Salle commissioners re-

ceived the specifications from the State Engineer Feb. 3. Two days later a meeting of the La Salle Commissioners was held and the offers briefly outlined above were presented to them.

Within an hour the free material had been accepted and plans begun for the work. Construction starts May 1.

The La Salle Commissioners are to pay \$5,000 for labor.

The Illinois Highway Commission is to supervise the construction and the concrete fellows are assured that a concrete road will be laid of the very best concrete type.

And now, in the meantime, what are the brick fellows doing?

There are about ninety-nine chances out of a hundred they won't know anything about the situation down in La Salle until they see this editorial.

In all probability, then, the brick fellows will be "asleep at the switch" as usual.

La Salle County, in which the City of La Salle is located, is one of the largest and wealthiest counties in the State.

The road, which the La Salle Commissioners propose to construct as a sample of what **GOOD** roads **SHOULD** be, is one of the best traveled roads in the County.

La Salle County, particularly this section around the City of La Salle, is very much behind in permanent road construction.

But before the year has grown very old there is going to be considerable road construction in that county.

Who do you think will furnish the materials?

The cement manufacturers? Naturally, unless—well, the paving brick manufacturers will have to get busy.

Wouldn't it be a profitable investment for the paving brick plants of Illinois to ask the Commissioners to let them show just what a **GOOD** road **REALLY** is?

Wouldn't it be a profitable investment to put a **REALLY PERMANENT** road of Vitrified Brick down alongside of the concrete road?

Think what an opportunity this would give the brick fellows to boost their product.

There is no question about what the result would be.

We know concrete is short-lived, even under the very best conditions.

We know that vitrified paving brick will last at least forty years for there are many streets and roads that have.

Put these two materials down, side by side. Let them be built under the very best conditions.

And then, as the evidence grows with the age of the two sample roads, see that it is given proper publicity.

Take pictures of both roads and print them in the municipal journals and the other papers and magazines that reach the municipal and highway commissioners and the contractors and the people.

Beat the concrete fellow at his own game—publicity.

Mr. Paving Brick man, here's **YOUR** opportunity. Seize it.



**A HINT
THAT PROVES
PROFITABLE.**

Over in Iowa there are several clay manufacturers who have developed a profitable business in a field that is still in its infancy.

These plants are equipped to manufacture drain tile and hollow block.

The average clay manufacturer who makes these two products is content with supplying the farmers with drain tile to drain their lands, and hollow blocks for building construction.

These Iowa plants, however, see a great opportunity to increase the demand for hollow block and have directed their attention to the farmer.

Attractive booklets have been printed with illustrations and specifications showing the many uses to which hollow block can be put on the farm.

Convincing ads have been designed and placed in the farm papers and the local papers, calling attention to the flexibility of the hollow block.

These advertising campaigns inform the farmer that hollow blocks are unusually valuable to him for erecting not only his silo and his residence, but also his chicken coop, his granary, his cellar, his tool house, his machine shed, his wagon shed, his barn, his smoke house, and, in fact, every building he finds necessary to construct on his place.

The farmer is not only told of the advantage of fireproof construction and permanent construction, but also of the cheapness of such construction. He also is told of the **WARMTH** of these buildings in the Winter months, and of their **COOLNESS** in the Summer time.

There is a great field for the hollow block manufacturer in **ANY** community but more particularly so in the agricultural sections.

At no distant date this journal hopes to give the practical experiences of some of these Iowa plants. In the meantime, the subject is worth **INDIVIDUAL** investigation.

The decision of the Detroit, Mich., City Building Inspector, H. A. Dupont, was that "poor concrete" caused the collapse of a concrete garage, there, known as the Cowley building, which resulted in the death of three workmen, who were unfortunately caught in the death trap.

WESTERN ONTARIO CLAYWORKERS MEET.**Publicity Question Among the Important Subjects Discussed—New Constitution Drafted.**

The Tenth Annual Meeting of the Western Ontario Clay Workers Association which was held at Windsor, Ont., February 12 and 13, in the rooms of the Builders' and Contractors' Association in the Thompson building, proved to be of unusual interest.

In the absence of President Davenport and Vice President J. Messacar, August Wehlann, 2nd vice president acted as chairman. A committee composed of Messrs. McCredie, Clark and Wehlann was appointed to draft a constitution for the association.

Mr. Jno. Messacar gave a very interesting talk on machinery, steam pipe, etc., and made some very practical suggestions in regard to improving a heater by utilizing the exhaust steam pipe. Mr. Jno. T. Miner, followed with practical remarks on handling drain tile and the care of tools. He contended that the tool chest well ordered and tools well cared for would increase a workman's efficiency about one-third. He also pointed out that with a well organized crew, the piece work system gives the best results in handling and making tile.

Harry Howell, a Windsor contractor, in behalf of the Builders and Contractors of Windsor, complimented the W. O. C. W. A. on its splendid work and pointed out the benefits resulting from the association of people interested in the same business and urged Canadian Manufacturers to take up the manufacture of hollow ware, fireproofing, lining, etc. He advised the members to make all the brick they possibly could this season as the exceptional wave of building activities now in progress throughout the Dominion would cause a continued demand for burned clay building materials.

The committee on the constitution brought in its report and after the proposed constitution was read and discussed, it was adopted as read.

At the evening session Mr. McCredie told of a 40-foot kiln, which had given him a great deal of trouble with cracked tile, especially in 12 and 14-inch lengths. He brought out some interesting points in manufacturing tile.

J. C. Steele, official delegate of the Builders' and Contractors' Association, welcomed the W. O. C. W. A. to the city, congratulating the clayworkers on the evident good-fellowship existing among them and commenting on the tremendous building wave now prevailing throughout Canada.

Device for Handling Tile.

Mr. McCredie, the first speaker in the Thursday morning session, introduced a device for the handling of tile by the use of an overhead track and swivel car, with suspended platform. The device is somewhat similar in construction to the letter carriers used on the farms.

At the opening of the afternoon session, Mr. Honsberger, of the Canadian Clayworker, extended the greetings of that journal.

Aug. Wehlann followed with a discussion of the publicity question. He stated that in view of the present over-demand he saw no especial reason for the clayworkers to advertise, as they were all running to capacity, and even then cannot keep up with the orders.

It was decided that the association meet next year with the Corn Growers, that the clayworkers should exhibit their wares also, and that each manufacturer offer prizes for the best corn grown on tile drained land in the township in which his works is located.

Mr. Drennan, representing the J. D. Fate Co., of Ply-

mouth, Ohio, complimented the W. O. C. W. A. on the work it was doing. Mr. Drennan offered a prize of \$5.00 in gold for the best exhibit of corn in the clayworkers' class for next year.

Officers Elected.

The officers elected were as follows: Aug. Wehlann, of Rodney, president; Ben. Broadwell, of Kingsville, first vice-president; G. W. Moody, of Highgate, second vice-president; A. Wehlann, of Cairo, re-elected secretary and treasurer. The executive committee: W. McCredie, Lyons; J. T. Miner, Kingsville; B. Broadwell, Kingsville, and G. W. Moody, Highgate. The auditors: A. W. Hill, of Essex, and Jno. Wardle, of Blenheim. The meeting adjourned subject to the call of the officers.

NEW SOUTHERN ORGANIZATION LAUNCHED.**Important Work Already Mapped Out Involving Outlay of \$300,000.**

The Clay and Mineral Producers' and Manufacturers' Association of Kentucky was organized on Washington's Birthday, 1913, at Paducah. Although a Kentucky organization, essentially, the big new body embraces members from the clay-working industries of Tennessee, Mississippi and Georgia, and will in time become a thoroughly representative Southern association. Inaugural ceremonies at Paducah were held under most auspicious circumstances, several score members of the trade from half a dozen states being present.

The first work of the new association will be to secure from the United States Government a sufficient appropriation to cover the cost of establishing and maintaining a \$200,000 laboratory at Paducah to analyze the clay products of America, and determine their properties in comparison with the deposits of foreign countries. It is evident that such an institution would become invaluable in promoting the growth of the brick, tile and pottery manufacturing industries in the United States, as well as in determining the proper tariffs to be placed upon the importation of foreign clays and clay products.

The association itself will establish a \$100,000 washing plant in Paducah to handle specimens of American clay and to assist in any work of analysis which may be authorized. In this way the new organization hopes to effect progress in the American industry similar to that which has been encouraged for years among the clayworkers of Germany, France and other foreign countries.

Paducah is to be made the focal point of the operations of the new organization for the reason that it is believed that large and valuable mineral deposits are tributary to that city. The sagger qualities are found abundantly throughout the clays of Western Kentucky, making these materials invaluable in the manufacture of china, porcelain and tiles. It is stated that 40 per cent or more of the clays used in East Liverpool, O., the biggest pottery center in the country, comes from Kentucky and Tennessee.

The election of officers for the ensuing year in the new Southern body resulted as follows: President, J. W. Williams, Hazel, Ky.; vice-president, C. T. Van Meter, Paducah, Ky.; secretary and treasurer, H. I. Neely, Hazel, Ky. Directors, W. H. Riddell, Paducah; J. W. Williams, Hazel; C. L. Van Meter, Paducah; Edward Gardner, Mayfield; W. J. Johnson, Paris, Tenn.; John Sant, Whitlock, Tenn.; R. H. Gerrard, Henderson, Tenn.; Cecil W. Morgan, Macon, Ga.

The next meeting of the Clay and Mineral Producers' and Manufacturers' Association will be held at the call of President Williams.



RECOMMENDS PERMANENT ROADS.

Urges the Construction of Roads to Last to Avoid Further Wanton Waste of Money.

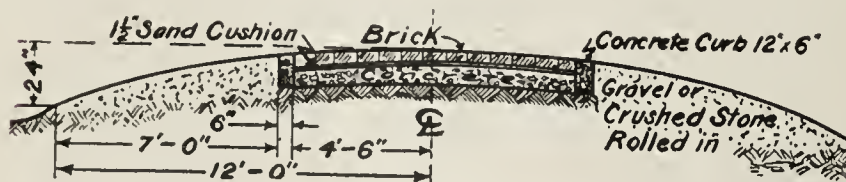
That the people are slowly awakening to the fact that the "cheapest" roads are not always the cheapest in the long run is evidenced by the discussion going on in various publications devoted to municipal affairs. A writer in "Good Roads" urges permanent construction of roads and describes an ideal brick road as follows:

As the \$50,000,000 bond issue has been voted for good roads in the state of New York, I think it is time to build our roads on different terms. To build a mile of road, at a cost of \$12,000 to \$15,000 per mile, that requires an expenditure thereafter of \$500 to \$600 per mile per year to maintain, is what I call a reckless and useless waste of money. While I was County Superintendent of Highways in Tompkins County, New York, I saw this done and I can't see at present any change for the better.

I don't think that a 16-ft. road is of any more use to the traveling public than a 10-ft. road. I have measured tracks many times where vehicles had passed and in every case they both cut off the paved part of a 16-ft. road. This being a fact, why not build our roads of concrete or brick, 10 ft. wide, then roll local stone or gravel into the shoulders for turnouts and have a road that will cost us \$500 per mile less per year to maintain.

The accompanying sketch shows a road section I would recommend for brick. I would construct a curbing 12 ins. deep and 6 ins. thick with $1\frac{1}{2}$ ins. of sand which would form a cushion for the brick. The brick road would need no maintenance for 50 years.

A similar construction could be used for concrete, in which case I would build it 6 ins. thick and while it was soft I would scatter in stone that would pass through



Proposed Section of Brick Road.

a 3-in. ring, so that the stone would be about one half in the concrete. This would leave a rough surface that could be maintained with screenings or gravel or with a sealing coat of oil and screenings.

I think all roads that are graded where fills are made of a depth of 3 ft. or more should be graded one year and the road paved the next year.

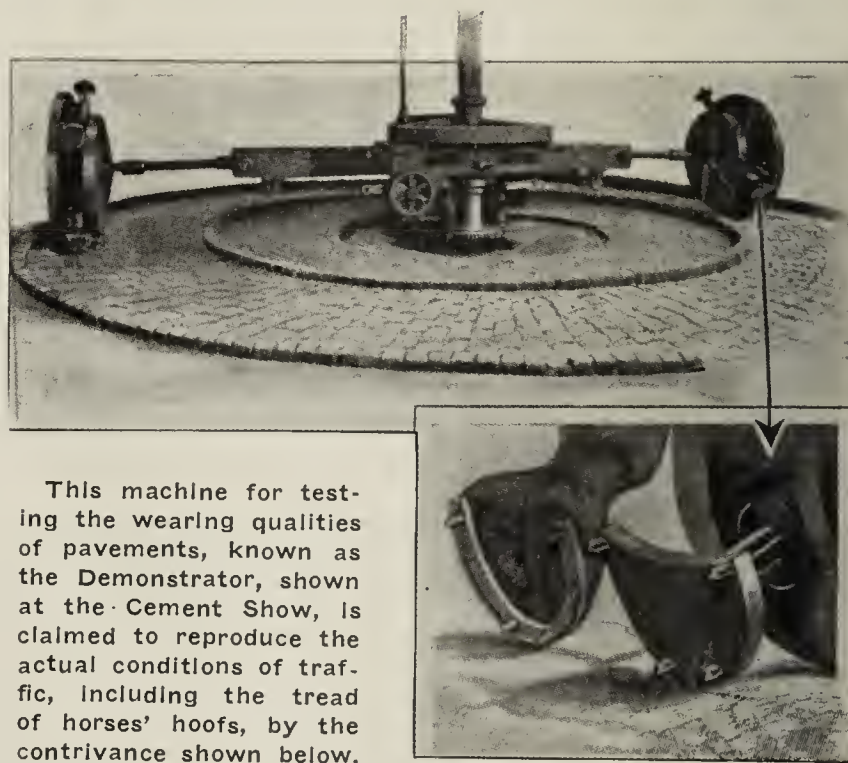
FRED C. EVANS,
Superintendent of Grounds.
Cornell University, Ithaca, N. Y.

SO-CALLED PAVING "DETERMINATOR."

Concrete Roadmen Build Novel Machine to Prove Value of Their Material.

A new machine for testing the wearing qualities of various paving materials, and known as a "paving determinator," has been recently demonstrated in Detroit to prove concrete is the best paving material. The machine was shown at the recent Cement show in Chicago and consists of an upright steel post having a large gear near its lower end for revolving the shafts upon which is fastened the testing apparatus. The apparatus is composed

of double interchangeable wheels, weighing 1,400 lbs., at each end of the horizontal shafts, which are so constructed that the outside wheels or disks may be removed and disks corresponding to the widths of different wagon tires substituted when desired.



This machine for testing the wearing qualities of pavements, known as the Demonstrator, shown at the Cement Show, is claimed to reproduce the actual conditions of traffic, including the tread of horses' hoofs, by the contrivance shown below.

One of the unique features of the paving determinator is its effort to reproduce the effect of a shod horse. This result is accomplished by means of five plungers connected to the horizontal shaft between the two wheels, each plunger having attached to its outer end a plate shaped like the bottom of a horse's hoof. Each plate has fastened to its surface four steel points, similar to the calks worn by horses on their shoes during cold weather. When the apparatus is put in operation, a cam, geared to the horizontal shaft between the two wheels, causes the hoof-shaped plate to strike the paving at a pressure of about 150 lb. as the wheels travel around the circular pathway. This striking action is instantly followed by a movement to reproduce the ankle motion as they travel, are caused to move back and forth upon the shaft. The determinator is operated by a 6-h.p. engine, and speeds varying, at the wheels, from 3 miles to 12 miles per hour may be developed.

The work of paving the Cherry Point Road, Edgar County, Ill., was recently finished, and the thoroughfare opened to the public. Hundreds of automobilists tried the road and expressed their appreciation of this, the first brick road in the county.

The Vallejo Brick & Tile Co., of Vallejo, Cal., has just booked a large order for paving brick to be used by an improvement company in opening up a new tract in San Francisco. Paving brick has had a hard time to get a foothold in San Francisco, but steady work by local and Seattle concerns is meeting with encouraging results.



WASTE AT THE CLAY PLANT.

Casual Visitor Amazed at Waste of Coal and Other Supplies.

A visitor to the ordinary clay plant is struck with amazement at the prodigal waste which seems to abound on all sides, along the track, leading from the mine to the plant, may often be found enough coal to supply a small family for a season. In the scrap pile are found parts of machines, thrown aside, which a skilled mechanic should be able to repair in a short time. Huge piles of broken or cracked ware are found in the machine room, which have been discarded by the off-bearing crew for various reasons and must be returned to the mill and reground. In various parts of the yards may be found large quantities of broken, cracked, twisted and blistered ware which have been taken from the kilns and dumped and must be either reground at much expense or sold for a pittance to be used for filling road beds. All of this discarded ware costs as much to manufacture and burn as the perfect ware which commands the top price in the market.

If you take time to look into the question it might surprise you to know just how much money is wasted at your plant by carelessness and inefficiency. Someone must pay for all this loss and when you ask your customer to do so, by raising prices, he resents it and perhaps decides to deal elsewhere.

Look about you and see if there is not some means of stopping the leaks and losses which are lessening your profits. Don't depend too much upon your employes to discover it. A personal investigation may disclose many faults in manufacture and handling of ware overlooked by the employes. Stop the waste and the dollars saved will be many.

DISCUSSES STACK CONSTRUCTION.

Brickworks Engineers Disagree as to Effect of Height of Stack on Draft.

Editor "Brick and Clay Record:" I note with pleasure that in your Jan. 15 issue Mr. Longenecker, of Chicago, takes decided exception to my statement in your Jan. 1 issue, that the height of a stack has nothing to do with the draft, and gives a few quotations from "Sterling," published by the Sterling Consolidated Boiler Co., now a part of the Babcock, Wilcox Co., of New York.

"Draft is difference in pressure which causes the gases to rise in a stack," according to examples and formulas, quoted on the pages of their book.

My reply is that it is correct in theory (an exposition of the abstract principles of a science or art, considered apart from practice).

In practice, when we (still pupils in the school of experience), start the fires in a kiln, the contents of which are still somewhat damp, and see the smoke from the fires and the evaporated steam from the damp ware come out of the stack, we say, "the stack has draft."

If we do not see the smoke and steam come out, it is not always because the stack is not high enough. The stack may be cold, and we in practice do not think of building the stack higher, we simply start a fire in the

stack and heat the cold air in it, thus causing a difference in pressure which causes the gases, smoke and steam in the kiln to move and rise in the stack. We have then created a "draft."

Mr. Longenecker, judging from his quotations from the pages of a boiler company's book, can not see how a low stack, properly constructed, can draw as well as a high stack.

Boiler and kiln stacks are two different propositions. In a boiler furnace it is not necessary to have as much heat to heat the boiler stack as in kiln furnaces to heat the kiln stacks, and therefore it is the practice to build boiler stacks high, when they could be built of larger diameter, increasing the draft area and draw just as effectively. I do not care whether it is wrong in theory, so long as it works in practice.

When I made the statement to which Mr. Longenecker takes exception, I did not mean that a stack 10 feet high and 6 x 6 feet, in the clear, would be as practical as a stack 40 feet high and 3 x 3 feet in the clear—far from it.

We take a height that has been established as standard to begin with, but we object to going higher as long as we know positively from experience that by doing so the cost will be increased and we know that we can make it just as effective and cut out a lot of extra expense.

We have learned from practical experience, that a stack for a 30-foot kiln, 40 feet high and 3 x 3 feet in the clear, is a safe size, even a stack 2½ x 2½ feet in the clear and 40 feet high, has been considered plenty large enough by a prominent brick yard engineering firm. We can build the lower stacks with an 8-inch wall outside, a 2-inch air space between it and the 4-inch lining. An additional height will increase the draft, only when the stack gets warm, so what is the use of going higher, when a lower stack properly constructed, is just as effective and costs much less to build and will stand up much better. Stacks above 40 feet high must be built with thicker outside walls, thicker as the height increases, and the lining also must be heavier. But that is not the paramount question; Mr. Longenecker is under the impression from the formulae in his book, that a higher stack will have more draft than a lower stack; even if that lower stack has an equal draft area in the stack flue, as the high stack. Is that your interpretation?

I wish to ask Mr. Longenecker, without belittling his ability, if he has ever built kilns and kiln stacks; if he has ever burned all kinds of clay ware in all kinds of kilns, with low stacks and high stacks, with stacks close to the kilns and at various distances from the kilns? If he has ever kept records of the time in burning, consumption of fuel and results obtained from these different conditions?

To compare kilns with low stacks with kilns furnished with a high stack: Suppose we build four kilns, each 30 feet in diameter, with a stack 40 feet high, and of such dimensions, that the stack has four flues, partitioned off, so each flue will be 3 x 3 feet in the clear, and we also build four kilns of the same size, but we build the stack for these four kilns four times forty or 160 feet high, 3 x 3 feet in the clear, without any partitions.

This is a high stack and any builder knows that it will not do to build such a stack with an eight-inch outside

wall. We could not get a brick layer to work on a stack over 40 feet high. We would have to construct at least a 24-inch wall, as a matter of safety, not only for the safety of the brick layers but also for safety of the structure, thereby considerably increasing the cost of the stack.

Not only the outside walls would have to be heavier, but also the lining would have to be at least 8 or 9 inches thick. After completing these kilns, I believe it would be possible to burn one, two, three or all four kilns together with the 40 foot stack, without any trouble whatever, while trouble might be experienced in burning the kilns with the 160 foot stack, in spite of the height. I note in Mr. Longenecker's quotation that: "A stack of a certain diameter, by increasing its height, can be made to produce the same available draft, as one of a larger diameter, the additional height being required to overcome the greater friction loss. That's exactly the point. That goes to show that if we have a stack of a large diameter, with the proper height, not necessarily higher, we have a stack for draft, but, if we have a stack of a certain (meaning of course smaller) diameter, it can be made to produce the same available draft as one of the larger diameter—by increasing its height. That shows that we could have made the stack originally larger in diameter and not so high. This agrees with the statement I made that the height of the stack has nothing to do with the draft, as long as we have the proper area in the stack flue. The height in the first place must, of course, not be under usual and considered standard conditions. We must not go to extremes.

Anton Vogt.

QUESTIONS AND ANSWERS

Here, Knotty Problems That Confront Puzzled
Readers of Brick and Clay Record,
Are Unraveled by Experts

Seeks Information as to Dry Pan Capacity.

55. *Texas.*—Kindly advise us as to whether one 9 ft. dry pan will be sufficient for grinding material of a soft fire clay variety for two 4-mold presses to manufacture 40,000 high grade manganese face brick per day. Would also appreciate information as to the use of manganese, proportion to use, etc.

Answer by prominent brickworks engineer:

No one can predetermine how much clay one pan will grind. We usually lay out a plant with one pan for each four-mold press, but frequently find clays which grind and screen so readily that one pan suffices for two presses. If your correspondent's clay is of this character he is safe in installing a single pan for 40,000 bricks per day, but the chances are that if he makes a high grade product, which will require finely screened clay, he will find that one pan will not keep two presses running to their maximum capacity, although he will succeed in getting more than 20,000 brick from the pan.

In regard to the use of manganese, he will get a very good mixture if the materials are properly weighed or measured and fed into the pan. We have found a dry pan to be a good mixing machine and with a little care on the part of the man feeding the pan, more uniform results will be obtained from the pan mixing than from any other method we know of. If your correspondent has had no experience in the use of manganese he has many things to learn. A good gray brick requires a basic clay which will burn a light buff—the lighter the buff the bet-

ter the gray color. A dark buff usually results in a muddy gray color which is not a very satisfactory product.

Another factor in producing good gray brick is to have a clay which will stand sufficient temperature to bring out the color effect of the manganese. The best temperature for this work we have found to range between cone 3 and cone 5. The degree of fineness of the manganese has a material effect upon the depth of color and its character. Manganese flour results in a dark, dead smooth gray brick. As the size of the grain increases we pass from this dead smooth color into a pepper and salt, which in many ways is more satisfactory than the dead smooth color. They are much easier to sort, and are more effective in the wall. Granulated manganese, without any fine material, takes us beyond the gray brick entirely and gives instead the buff mottled brick which are quite popular in the market.

Best Type of Clay Elevator.

54. *Kentucky.*—What is considered the best type of elevator for conveying clay from dry pan to screens? The grinding capacity is about 25 tons per hour. What sized buckets should be used, what space between buckets on belt and what speed in feet per minute should bucket belt be run in order to take care of this tonnage? The material we handle is always damp and occasionally it is very damp, in other words at times it is as wet as a dry pan will grind. Is a sloping elevator better than a vertical, and if so, what degree of slope is best?

The selection of the best type of elevator for conveying clay from dry pan to screen is largely a matter of opinion. Our preference is for a belt elevator. For a capacity of 25 tons per hour we would use a 7 x 14 standard bucket either seamless pressed steel or malleable iron, and we would have the belt 2 inches wider than the length of the bucket.

The speed of the belt depends upon the size of the head pulley. A safe rule is to make the speed of the belt 100 times the diameter of the head pulley in feet, which will give speeds for the usual size pulleys varying between 200 and 300 feet per minute.

There should be no serious difficulty in handling any clay which is sufficiently dry to be ground and screened in a dry pan, but there are many clays containing sufficient moisture to cause the clay to cling to the elevator buckets. Such clays are said to build up and this building up materially reduces the capacity of the buckets and requires frequent cleaning. For such a clay, we would attach to the elevator an automatic knocker which can be thrown into operation at any time, or can be kept in continuous operation if desired.

A sloping elevator has a slight advantage in dumping at the top, but with a properly constructed receiving chute and with a correct belt speed we have no difficulty in throwing the clay from the vertical elevator buckets to the chute. When not properly constructed, however, there is danger of the clay being spilled down the chute to be picked up again at the bottom. A sloping elevator would overcome any trouble of this kind but there should be no such trouble. The objection to a sloping elevator is that it must have a suitable guide upon which to slide; otherwise the sag greatly interferes with its operation. We would use a vertical elevator wherever possible.

Many manufacturers prefer chains to belts. The upkeep of a chain elevator is greater than a belt elevator, because when a chain becomes worn to the breaking

point it is advisable to throw away the entire chain and replace it with a new one.

The advantage of the chain over the belt is that its action is positive. There can be no slipping and the chain must continue to run no matter what the construction may be, otherwise it breaks. A belt elevator, on the other hand, will oftentimes slip and there are frequent short delays on this account. With extended experience, however, in the use of both types, our preference is for the belt elevator.

A Day's Work for Setter and Tosser.

59. *Illinois.*—Can you tell me what constitutes a full day's work for a "tosser" and "setter" respectively?

Much depends on the kind of brick to be handled. A man handling heavy paving block could not, of course, be expected to handle as many as the man handling face brick. Face brick require more careful handling than common brick, hence require more time. On one large face brick yard, the superintendent informs us, brick setters and tossers, each handle approximately 10,000 to 12,000 brick per 9 to 10 hour day, the work being done by the thousand.

A large producer of paving block says most of their setting is done by piece work. They pay the head setter 48c per thousand for setting standard paving block, and suitable variations in the price are made for setting different sizes of block. Under the direction of the superintendent, the head setter hires the necessary men to assist him in setting the output of the plant. The price paid for setting generally includes the transfer of the block from the dryer to the kilns. Local conditions and customs, of course, necessitates slightly different arrangements at each plant. Four men, working under good conditions, can set 25,000 to 28,000 block for a day's work.

From 12,000 to 16,000 per day is considered a good day's work for tossing and setting common brick and 17c per thousand is considered a fair price for piece work.

The Simplest Glaze.

60. *Ohio.*—Will you give me a simple and practical glaze?

The simplest of all glazes is undoubtedly the salt glaze. It is used by sewer pipe manufacturers and very largely used by the stoneware potter. The manner of glazing consists mainly of throwing salt on the fires just before finishing a kiln. This results in a chemical decomposition—the elements composing the salt—sodium and chlorine, breaking up the heat, the sodium reuniting with the silica of the clay as it is carried into the kiln proper by the gases and comes in direct contact with the ware. Silicate of soda, the simplest of glazes, is formed.

The Measure of Plasticity.

61. *Tennessee.*—How can I use the tensile strength of dried clay briquettes as a measure of plasticity?

Make the clay into briquettes resembling the figure 8. A suitable registering machine, such as Fairbanks' testing apparatus or the Schoene machine, can then be used to pull the briquettes in two. The data obtained really is of more interest to the investigator than the practical man.

To Measure Draft.

62. *Iowa.*—Recently I read in "Brick and Clay Record" a very interesting article on burning and was particularly interested in the reference to measure of drafts. I believe it would be a great help to many tile men if we knew accurately the amount of draft we are getting in the kiln. What part of the kiln is the instrument to measure draft applied to?

Near the stack is the best place to apply the instrument, but it may be applied to any part of the kiln successfully. It might be well to apply it on either side. Should there be a difference in draft on one side from the other, you can then ascertain the difference and act accordingly, using your damper, of course, to control the conditions. The advantage of the draft gauge is that it brings the question of draft down to actual figures.

Pebbles in Clay.

63. *California.*—We have a limestone clay full of pebbles, and experience considerable trouble with it. Can you suggest some remedy?

There are crushers on the market that are said to remedy troubles such as you are experiencing. There also is machinery expressly made for washing clays that is used by brick and tile makers. A hardwood washer which we have seen, satisfied its builder. It is a circular vat about 14 feet in diameter. There is a shaft in the center and on the top of that is a bevel gear and a band wheel. There is a lever near the bottom to which is fastened a chain drag made of two or three 3x4 scantlings with long teeth. One corner of this drag is fastened to this chain and the other to the center shaft. Dump your clay into the vat from the cart, a little at a time. An inch and a half of water should go into the clay continuously. The slush from the vat goes into a screened box—say of four meshes to the inch for brick and tile. From this box the slush goes to the drying places, of which there should be two. It can run through a common wooden trough and should spread over a considerable territory. Our friend washes the clay in the spring and lets it lie until the next year before he uses it. In this manner it freezes and weathers and is in a good condition to use.

Clay Suitable for Hollow Block.

64. *Colorado.*—Will all brick and tile clays make good hollow block? What must the nature of the clay be to make hollow block?

No. The second question can be answered only in a general way. It is conceded that hollow block require a better clay than ordinary drain tile. The main difficulty in hollow block is to get the corners to run square. Tender clays are hard to work into the corners. A tough clay, therefore, is better, and this should be well-tempered.

USEFUL LITTLE HINTS

Babbitt is ready to pour when it will ignite a light pine stick.

Be liberal with lubricants and your machines will repay your liberality by an increased efficiency and longevity.

A mixture of unslaked lime and chalk powder, in equal parts, used dry, will remove grease and stains from steel.

If you have scum trouble due to crude oil used on the cutter and repress rolls, pure lard oil mixed with kerosene will remedy it.

To prevent the metal from turning while being drilled, place a piece of stiff paper or emery cloth between the metal and the drill-press table.

Superintendents should never walk leisurely through the plant—it has a bad effect on otherwise efficient help. One superintendent makes it a point to rush from one part of the plant to the other. It not only saves him time and increases his own capabilities but it encourages his men to speed up. There is a lot in suggestion.



THE TESTING OF FINE CLAYS.

Dividing Line Between Refractory and Non-Refractory Clays Determined by Heat Test.

M. F. Beecher, assistant in Ceramics at the Engineering Experimental Station, Ames, Ia., in a recent issue of the "Iowa Engineer," told of simple method of testing fire clay in "Carbon Resistance Furnace," as follows:

The term "fire clay" as it is generally interpreted has a very indefinite and elastic meaning. Usually it is applied to any clay which may be made up into wares that will withstand high temperature. This might mean any degree of heat from that attained in an open fireplace to that reached in a furnace for ore smelting. Obviously a clay suitable under the first set of conditions would not, in all probabilities, be suitable under the second. Fire-clays are frequently found associated with coal seams and in consequence miners invariably call any clay so associated a fire-clay. In general this is far from the truth. The clay worker, at least, must have a more definite conception of the meaning of the term.

It is commonly accepted that the dividing line between refractory and non-refractory clays, as regards their temperatures of fusion, lies at or near 1,650 degrees centigrade, although this cannot be taken as a safe criterion for classifying refractories. It can be safely said, however, that very few No. 1 fire brick are made from clays fusing below this point. Since a high fusion point is the prime essential, its determination might well be made the first preliminary test.

The clay to be tested is moulded into a small "trial" the size and shape of a Seger cone (a tetrahedron or triangular pyramid about two inches high and measuring about half an inch at the base). This is placed in a vertical position on a fire-clay slab, lowered into a suitable furnace, and the temperature gradually raised until fusion has proceeded to such an extent that the sharp edges of the cone have assumed a rounded appearance and the tip has fallen over until it touches the base. The temperature at this point is recorded as the temperature of fusion.

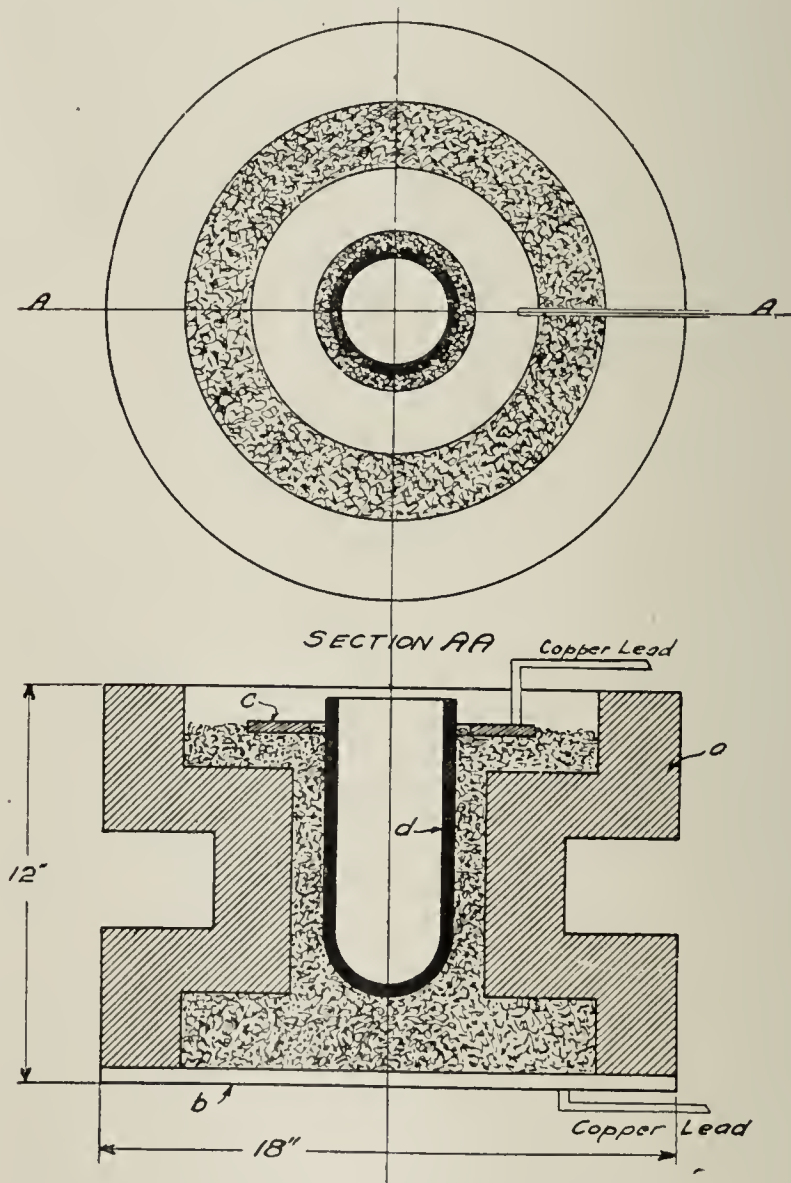
No Well Defined Melting Point.

At first this might appear as a very reliable index to the character of a clay, but upon carefully considering the facts this is found not to be the case. Clays, being mixtures of minerals rather than definite chemical compounds, have no well defined melting points. The change from the solid to the viscous state is very gradual, often extending over a period of several hundred degrees. If two clays are taken whose cones show the same temperature of fusion, it may occur that if an appreciable load be applied to each at temperatures approaching their fusion points, great difference will be noted in their failure temperatures. This is due to the difference in their periods of softening; the one having the longer softening period failing first.

To this end, a test of fire brick under load at high temperatures has been devised by Bleininger and Brown at the Pittsburgh Testing Laboratory. The furnace used for this work was of special design and is described by them in detail in Vol. XII transactions A. C. S. It is fired by means

of natural gas and compressed air and it is possible to bring the temperature up to 1,350 degrees Centigrade in about five hours. The load is applied to the brick by a lever outside the furnace and is carried to the brick through a high grade fire-clay bar acting as a column. The lever is fitted with adjusting bolts by means of which it can at all times be kept in a horizontal position. The movement of the lever can be observed by the operator and is an index to the action of the brick under test. Their final recommendation is that the brick be placed on end under a load of 50 pounds per sq. in., and subjected to a temperature of 1,350 degrees Centigrade for one hour. They further recommend that a one-pound fire brick should show no other marked deformation than a shortening of not to exceed one inch in the total original length of nine inches.

Some objections might be raised to this test on the ground



Cross sectional view of Carbon Resistance Furnace

that the time factor at high temperature figures prominently in the failure of fire brick and that in this case the specimen is held at the maximum temperature for only one hour. On the whole, however, the test relatively approximates actual conditions of use and gives such consistent results that it is likely to become, in time, a standard test for fire brick.

The furnace used for making the actual fusions are of several different types. The "Carbon Resistance Furnace"

is probably the most convenient and satisfactory of those in use. It is described by Coggeshall and Bleininger in Vol. X Trans. A. C. S. A cross-sectional view is shown in the sketch. The casing "a" is made from a high grade fire clay and is supported on a wrought iron plate "b." A wrought iron ring "c" and the crucible "d" complete the list of parts. The annular space between the crucible and casing is packed with carbon; a grade known commercially as "Electric Furnace Carbon." The electrical connections are made through the supporting plate "b" and the ring "c." The heat is generated by the resistance of the carbon to the flow of current. The current from the power line is stepped down

through a suitable transformer so that it is available at five volt intervals from twenty to seventy volts. With this apparatus it is possible to get sufficiently high temperatures to fuse almost any clay. With the one in use in the Ceramics Laboratory of the Iowa State College, temperatures of over 3,200 degrees Fah. have been obtained and this limit was determined only by the failure of the crucible by melting.

Methods for the testing of fire clays and fire clay products have not yet been standardized but considering the progress that is being made in ceramic work, it should not be long before methods for systematic examination are made available for more general use.



LAYING DRAIN TILE IN TREACHEROUS SOIL.

A. M. Shaw, New Orleans Consulting Engineer, Tells How He Solved the Problem.

The difficulties attending the laying of drain tile through certain classes of material are not only vexatious but often prevent carrying out drainage work which if successfully completed, might be of great value. In two instances, under quite dissimilar conditions, the writer has been able to lay and maintain a line of tile through treacherous material by wrapping the joints with one or two layers of burlap.

In the first case, a wet railway cut was giving considerable trouble due to the stoppage of the drainage in the side ditches by small slides. A tile drain was decided upon, with the idea that this would be below the line of disturbance and would carry off the water and possibly prevent further slides. It was found, however, that the movement of material, while slight, extended down to the tile to a degree sufficient to disturb the line and cause the joints to open and the tile to fill with sediment. That section of the tile which had been disturbed was taken up and relaid on a board bottom, one side of the line of tile also being protected by boards. Common fencing was used, forming an L, in the angle of which the 6-in. tile was placed. Each joint of the tile was wrapped with burlap, a strip one yard in length and a foot wide (folded to 6 ins. wide) being used. It was found that the easiest way to place the burlap was to lay it across the bed of the ditch in advance of the tile, so that after the tile were placed the ends could be brought up and over each joint. This treatment proved to be an entire success, though it would probably be of little value in cuts in which a large displacement of material occurs.

To drain a small pond for agricultural purposes, it was necessary to lay a line of tile through a sand ridge, the greatest depth of cut being about 7 ft. Quicksand was encountered for a distance of several hundred feet. This ran into the joints so freely that the tile were soon filled. A repetition of the burlap treatment was again used, with satisfactory results, though the boards were omitted in this case. The tile have now been in place for three years and the owner advises that they have never shown any indication of restricted flow. Through the sand ridge,

this line was laid with a grade of less than $\frac{1}{2}$ -in. per 100 ft.

The advantage of burlap for use with drain tile as compared with a rigid cement joint are: It is easy of application in cramped quarters; it permits considerable movement without opening the joints to an objectionable degree; and it permits infiltration of the water at joints.

This last point is not always fully appreciated, as it is still the popular impression that "porous" tile are really porous. As a matter of fact, the amount of water that will pass through the walls of a line of tile under ordinary conditions is negligible. Several years ago the writer flow through the sides of soft-burned farm tile. Samples made a number of experiments to determine the rate of were selected from a car of unglazed tile, some of the samples being exceptionally underdone. One end of each tile was sealed and the cylinder filled with water. The surface of the water quickly lowered until there was evidence of moisture on the outer surface of each tile; the rapidity of absorption (but not the amount) appeared to bear some relation to the degree of hardness of the tile. After this initial lowering of the water surface had taken place, each tile was again filled. Any subsequent loss of water in each sample might easily be accounted for by the evaporation from the surface and from the sides of the tile. Certainly not enough water passed through the walls of the tile to cause a stream or even drops of water to appear at the base.

It is probable that the life of burlap is comparatively short when used as described. But the tendency of thorough sub-drainage is to change the character of the soil through which the drains pass, and by the time the temporary covering has rotted the difficulties requiring special protection at the joints may have been overcome. —Engineering News.

MILLION ACRES RECLAIMED BY DRAINAGE.

The annual report of the Missouri Waterway Commission shows that 1,191,698 acres of alluvial Missouri land have been reclaimed through drainage and levee work. This includes 96 drainage districts, 14 levee districts and seven drainage and levee districts. The average cost per acre for the land reclaimed was \$4.39.



SCARCITY OF BALL CLAY NOTED.

Advance in Ocean and Rail Rates Tends to Advance Prices—Industry Should be Developed.

Stoneware potteries in the vicinity of Crooksville, Roseville, Ironsport and White Cottage, O., are expected to be consolidated under one management ere another month passes, although detailed plans have not as yet been worked out. Attorney Thomas Watson, with offices in the Brick building, Pittsburgh, Pa., has been working on this plan for the purpose of creating "greater operating efficiency," and it is said that the owners of the different potteries who have been approached are agreeable to the proposals.

According to current information, there will probably be eight or ten stoneware potteries operated under the consolidation of interests. "It is too early to give out any detailed statement regarding plans," declared Mr. Watson, when he was seen at his office, following a hurried trip to the Zanesville and Crooksville districts.

Pottery manufacturers have to pay more for the sponges now used in the clay shops, the latest quotations showing an advance of about 25 per cent over the 1912 lists. It is claimed there is a shortage of this kind of sponges, and that they are hard to get. It is also said that some special sponges used in the potteries cannot now be had at any price.

Anent the scarcity of sponges, there is also a scarcity of English ball clay, spar and domestic ball clay. Every spar mill in the country is working to capacity, 24 hours per day. Conditions have been against the early delivery and mining of domestic ball clays from the southern mines, it being almost next to impossible to haul the clay from the mines to the railroads. In the case of the English ball clays, both ocean and rail rates have been advanced and there has also been a shortage of vessels. The tendency in raw material prices is toward higher levels.

The strike of the stoneware pottery workers in the Crooksville, O., district has been settled, and the men have returned to their benches. The state board of arbitration failed to make an adjustment. Finally, the union workers held a meeting, voted to go back to work, and at the proposition offered by the manufacturers. The workers wanted an increase of 17 per cent in wages, and the manufacturers sought a reduction of 10 per cent. The adjustment was made when the manufacturers agreed to pay the men the same rate of wage they received last year.

At the annual meeting of the stockholders of the Crooksville China Co., at Crooksville, O., the following board of directors was elected: G. W. DeLong, J. G. McDougal, P. W. Newlon, S. H. Brown, J. L. Bennett, W. H. Brown and J. F. Shelby. The board organized by electing these officers: President, J. L. Bennett; vice-president, W. H. Brown; secretary, treasurer and general manager, Guy E. Cooks. The company has plans made for the erection of an additional glost kiln, and the installation of a telephone system throughout the pottery.

It is now reported that the W. S. George Pottery Co. will not rebuild its plant, which was destroyed by fire at East Palestine, O., last year. This company has an-

other large pottery in the same town, which is operating to capacity, and recently it took over the "No. 2" pottery at Cannonsburg, Pa., built by the Cannonsburg Pottery Co. This will give the firm a capacity of 21 kilns, of which fourteen are in East Palestine and seven in Cannonsburg, Pa.

The capacity of the combined kilns at Sebring, O., is to be increased by improvements already arranged for by the French China Co. At least three additional kilns are to be added to the "French," while five new decorating kilns will be built. The present decorating kilns will be razed to make room for the new glost and bisque kilns.

One of the largest deals involving a Trenton, N. J., pottery corporation was announced during the last few days, when the fact became known that the Sanitary Earthenware Specialty Co., operating plants in Trenton and Columbus, O. (the former Bell pottery plant), purchased the plant and real estate of the Inter-State Pottery Co., which is also located at Trenton. This pottery has a capacity of five kilns and about seven acres of adjoining real estate.

While no statement has been made as to the amount the Interstate owners received for their pottery, it is said that over \$20,000 changed hands. The Inter-State plant was owned and operated up to Feb. 14 by Charles B. Walton, and his son.

The Sanitary Earthenware Specialty Co. started in business in Trenton, and was so successful that additional plant capacity was required. The firm then bought the plant, formerly operated and known as the Bell Pottery Co., at Columbus, O., and has operated it continuously since. With the new property under their management, the Sanitary Co. assumes the position of one of the largest manufacturers of sanitary pottery and specialties in the country.

Exceptions Taken to Hamilton Report.

Dr. H. T. Sutton, of Zanesville, Ohio, a member of the State Board of Health and a well-known physician, takes exceptions in unmistakable terms to certain parts of a report made by Dr. Alice Hamilton recently concerning lead poisoning in potteries and tile factories in the city of Zanesville. The report in question appeared in the August bulletin of the Federal Department of Commerce and Labor.

Dr. Sutton was reading a paper on "The Responsibility of the Health Officer," when he referred to the report of Dr. Alice Hamilton as "A striking example of exaggeration, through a false and apparently malicious and slanderous report and an erroneous one." He claims practically every statement she makes in the report with reference to the Zanesville conditions is absolutely false and misleading. He says the statements are inexcusable and unpardonable because the facts were easily obtainable.

"But this woman," continued the Doctor, "came to our city about a year ago and discovered that almost the entire force of employes of the establishments in Zanesville were suffering from lead poisoning in some form or other, and she claims to have obtained her information from twenty-one of our physicians. A careful poll of the profession made during the last three days brands her statements as boldly misleading. Her statements in regard to the low wages are equally false."

MANTEL, TILE AND GRATE DEALERS MEET.**Hotel Pontchartrain, Detroit, Overflowed for Three Days With Convention Guests.**

With the exception of the convention at New York last winter, the meeting of the Mantel, Tile and Grate Dealers' Association, held at Hotel Pontchartrain, Detroit, Mich., Feb. 11, 12 and 13th, was the largest in the history of the association. The reports made at the executive sessions of the convention bore witness to the general improvement in the product of the trade and the conduct of the business. The establishment of closer relations with the operatives in the trade have disposed of threatened strikes in several cities where the unions are strong.

"The tile that sells nowadays is distinctly an art product," said one of the officers of the convention. "It is coming more and more into use for the adornment of the exterior of great buildings and the interior of public gathering places."

In welcoming the delegates, President Homer Warren, of the Detroit Board of Commerce, said: "Nothing more illustrates the growth of this country in the luxuries and refinement of civilization than the development in recent years of the tile industry. Abraham Lincoln has been dead less than 50 years, yet he never saw a tile bath room, an electric light, or rode in an automobile or Pullman berth. When Abe was a boy he took a bath once a week in a washtub in the kitchen."

At the final session of the convention, New Orleans was chosen as the place for holding next year's meeting. Officers were elected as follows: President, Robert Beck, Chicago; first vice-president, George T. Eubanks, Atlanta; second vice-president, R. L. Pollvogt, St. Louis; treasurer, Thomas J. Foy, Cincinnati; members of executive board, J. W. Lantry, New York; F. L. Graf, Pittsburg; W. J. Northcross, Memphis. The convention closed with a banquet at the Hotel Pontchartrain Thursday evening.

IN THE REALM OF PUBLICITY.

"Methods of Drying Clayware" is the title of a very instructive catalogue issued by the Manufacturers Equipment Co., at Dayton, Ohio. This booklet deals with the Justice Radiated Heat Dryer exclusively. The publishers consider the content of this book so valuable to the clay workers in general and particularly those who contemplate dryer installation or improvement, that it has gone to the trouble of having the contents of the booklet copy-righted. The catalogue contains eighteen pages of matter relative to dryer troubles and the Manufacturers Equipment Co.'s method of curing them. The booklet also contains reproductions of some plants that are successfully operating the Justice Radiated Heat Dryer and illustrations of the dryer itself showing the manner of its construction.

The John C. Boss Co., of Elkhart, Ind., is sending out to the trade its latest catalogue which illustrates thoroughly and describes fully the "Original Boss System of Drying Brick." The book contains valuable information as to methods of bringing about more economical and better drying conditions at the clay plant. Each part of the Boss dryer and the conditions to be met with in drying are described in the catalogue and the complete plan of the Boss dryer, together with the fan room, is illustrated on a three-page folded insert.

The "Lakewood Line" of brick presses, portable tracks, drying cars and clay cars, is completely set forth in a catalogue recently issued by the Ohio Ceramic Eng. Co., of Cleveland, Ohio. The book is, from a printorial stand-

point well gotten up and the illustrations in two colors on highly enameled stock makes it an unusually attractive book. The reading matter is supplemented by complete schedules of prices and sizes.

The Edgar Allen Manganese Steel Co., Chicago, Ill. recently issued its bulletin number 55, which relates to steam shovel and dipper repair parts. This booklet contains reproductions of all of the individual parts of a steam shovel and dipper dredge that are quite frequently renewed, which makes it of value to the busy man who find himself suddenly in need of repairs.

"Cling-Surface Treatment for Ropes" is the title of a bulletin just published by the Cling-Surface Company, Buffalo, N. Y. This bulletin shows a number of noteworthy treated rope drives, giving technical data and carefully describing them in full.

Highest Brick Chimney in Canada.

What is said to be the tallest radial brick chimney in the Dominion of Canada is located on Baptist's Island, Quebec. It is 250 feet high and its purpose is to serve the large boiler plant of a paper mill. The inside diameter at the top is 10 feet, the outside diameter at the bottom 20 feet 3 inches, and the inside diameter at the bottom 14 feet 5 inches. The radial brick of which the chimney is constructed are perforated vertically, the perforations forming dead air cells which tend to prevent rapid heating and cooling of the walls of the chimney while at the same time preventing rapid radiation. The perforations also lighten the entire structure and effect quite a saving in connection with the foundations. The chimney is lined with special radial brick for 60 feet, which prevents the hot flue gases from coming in contact with the interior walls of the chimney proper. For the first 30 feet the chimney is octagonal in shape and the balance of the chimney is round.

BEAUTIFUL ANCIENT TILES UNEARTHED.**Archaeologists Find Interesting Relics Among Ruins of Royal Palace.**

Among the ruins of the royal palace in Shushan, archaeologists have discovered a number of beautiful enameled tiles, which once formed part of a frieze or wall-decoration, says the "Ohio Architect, Engineer and Builder." These tiles are now in the museum of the Louvre in Paris, put together to look as they did in their original position. The colors of the tiles are mostly orange and yellowish orange, blue and greenish blue. The four lower rows of tiles and the six upper rows have various ornamental shapes drawn on their surfaces and finished in different colored enamels. The middle part of the frieze is taken up with a procession of lions, striding majestically along, one after the other, with tails lashing the air and jaws open as if for a commanding roar. The two uppermost rows of tiles combine to produce a row of circular disks, like daisy heads, each with fifteen radiating petals; they are supposed to be symbols of the sun, and indirectly of the divine goodness that manifested itself in most striking ways by means of the sun.

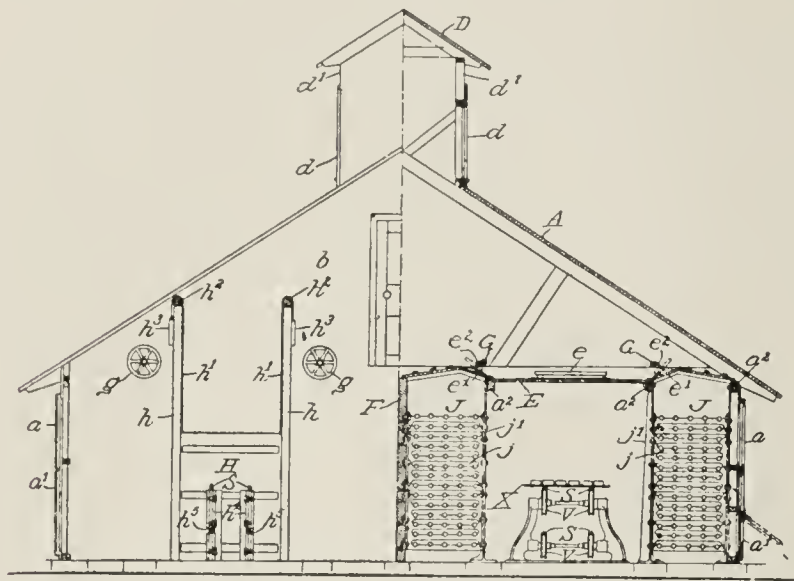
What was to have been a moving picture theater, on Eastern Ave., Cin., O., is now a mass of ruins. It was of concrete construction and collapsed suddenly, while work was going on. The time-worn excuse of the forms being removed too soon was offered, but such an excuse is small comfort to the widow and children of the laborer, who lost his life by reason of being obliged to work with this treacherous material.

RECENT INVENTIONS of CLAY MACHINERY

Up-to-date Time and Labor-Saving Devices Reduce Cost of Producing Burned Clay Building Materials

1,011,465. BRICK-DRYING PLANT. William Richard Martin, Lancaster township, Lancaster county, Pa. Filed April 8, 1907. Serial No. 367,045.

An elongated brick-drying house containing a closed drying room having a steam pipe drier comprising superimposed layers of pipes connected with a source of steam-supply and constituting shelves for supporting pallets of brick, the roof of the house having protected off-draft openings, and one of the side walls of the room and the outer wall of the house being the same and having doors adapted for opening up the sides at or from the bottom

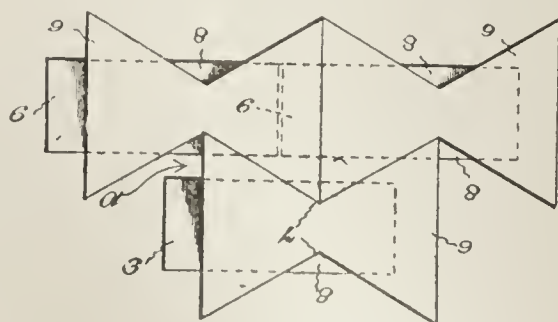


whereby the brick can be dried by steam heat assisted as desired by drafts of outside atmospheric air entering at the bottom from the sides of the house.

A brick-drying house inclosing a closed drying room or chamber containing steam-pipe racks arranged along the opposite sides of the room for supporting pallets of brick, the roof of the house above said room having off-draft openings, and the ceiling of the drying room having doors or dampers directly over each rack adapted to be closed or opened for holding heat and moisture in the drying room or allowing its escape.

1,002,979. BUILDING-BLOCK. Edwin S. Fee, Chicago, Ill. Filed May 29, 1911. Serial No. 630,230.

A building block having two of its opposite edges formed with angular recesses extending from the corners of the block, with webs extending across the apex of the recesses, the depth of said webs being less than the depth of the recesses, and the face of the webs being offset inwardly from the plane of the faces of the block, and said edges of the block being slotted lengthwise; which slots correspond in width to the width of the webs and extend

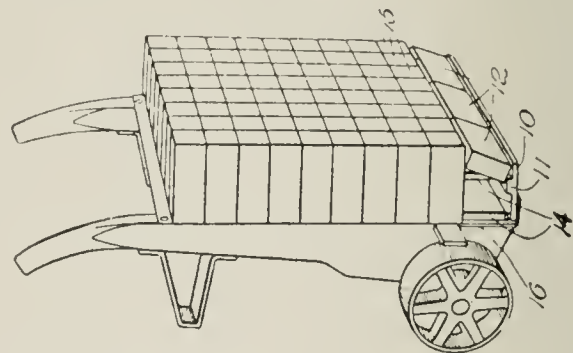


from the corners of the block inwardly to the plane of the outer edges of the webs; the other two edges of the block having, respectively, a tongue and a recess; the opposite edges of said tongue coinciding with the outer edges of the webs and the inner ends of the slots, and the recess connecting the slots of the corresponding ends of the block.

1,005,013. BRICK-HANDLING METHOD AND PALLET. William H. Francis, Cherryvale, Kans. Filed July 8, 1911. Serial No. 637,577.

The herein-described method, which consists in piling a stack of brick on a support with a bottom layer tilted, and moving the stack transversely to turn said bottom layer on its side, and remove the stack from the support.

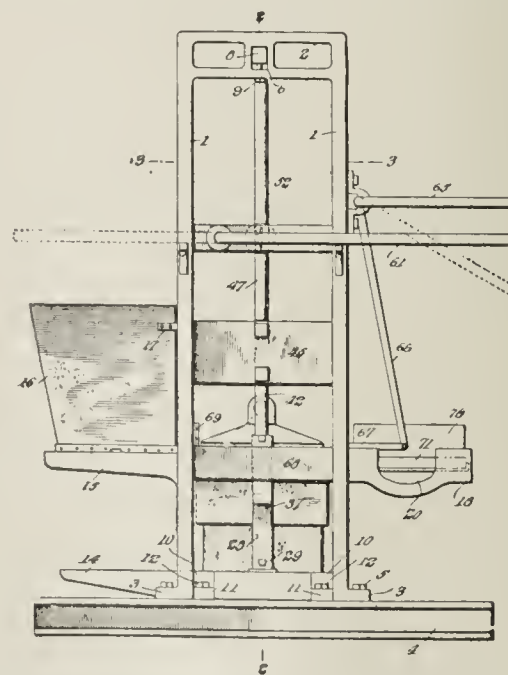
The herein-described method, which consists in arranging the bottom layer of brick end to end on edge in a titled line, placing the next layer at right angles to said bottom layer to rest thereupon at one end, supporting the other end of said next layer on a swinging support, and



moving the stack bodily to turn said bottom layer over to rest on its flat side face and furnish a support for the brick stack.

994,560. BRICK-MACHINE. Arthur Stanley Bacon, Oklahoma, Okla. Filed Feb. 15, 1910. Serial No. 543,983.

A machine of the class described comprising a frame having transverse guideways, an open end box movable in the guideways, and provided with spaced parallel transverse partitions, a lower die plate composed of similar sections spaced apart, each having a flat upper face, the faces being in the same plane, each section moving in a compartment of the box, means for supporting the sections, an upper die plate having transverse grooves for receiving the partitions, a top cross bar on the frame, toggle levers arranged between the upper die plate and the top cross bar, an arm connected with the joint of each toggle, a crank shaft journaled on the frame and having a crank for each toggle to which the arm is connected, a lever for oscillating the shaft, a rock shaft journaled on the frame, and having an arm at one end for



oscillating said shaft, and a plurality of arms intermediate its ends, links rigid with the arms, arms pivoted to the box and to the links, a hopper at one side of the frame and above the adjacent ends of the guideways, and a pallet support at the opposite end of the frame at the opposite end of the guideways, and means for detachably locking the plates together.



Conditions from the Atlantic to the Pacific as Reported by Our Expert Observers— Market Fluctuations and Industrial Prospects

NEWS OF THE CLAY WORLD.

The Suburban Brick Co. moved its general offices from Wheeling to Moundsville, W. Va. Phillip Hodgman will have charge of the office end and F. G. Atkinson will manage the plant.

The stockholders of the Grinnell (Ia.) Brick & Tile Co. met and elected the following officers: R. G. Coutts, president; Grant Ramsey, vice-president; C. A. Smith, secretary; H. F. Lamphere, manager.

The Bonnot Company of Canton, Ohio, reports having shipped several carloads of machinery through the Chicago Brick Machinery Co., to Warren Overpack at Medicine Hat, Alta., for the large brick plant he is building at that place. The outfit will include a Canton special brick machine, a rotary automatic cutting table of 100,000 capacity, a heavy duty pug mill and represses.

C. A. Baker has purchased the interests of C. W. Ewing in the firm of Emery Baker & Co., at Des Moines, Ia., dealers in brick and other building materials. The firm will be known as the Baker Brick Co. hereafter.

The Central Shale Brick Co., St. Louis, Mo., held its annual meeting and elected the following officers: C. E. McEwing, president; W. D. Woodruff, vice-president; C. P. Tilley, secretary and treasurer.

Mr. A. V. Broughner, of Greensboro, Pa., who was interested in pottery for many years, died at the age of 83.

The Davenport (Ia.) Brick & Tile Co. held its annual meeting and elected the following officers: August Steffen, president; D. H. Pape, vice-president, and John Berwald, secretary and treasurer. Its yearly report was very favorable and showed a marked increase in sales over many previous years.

The Maryland Fire Brick Company, of which S. B. Kanowitz, is general manager, is erecting a large plant near Baltimore, Md., where it has a deposit of very high grade fire clay. The Company will manufacture fire brick for all purposes and is installing an outfit for fireproofing and other forms of hollow ware. The Bonnot Company of Canton, Ohio, secured the contracts for two complete outfits of machinery. The L. E. Rodgers Engineering Company is in charge of the designing of the plants.

The new tile factory at Stotesbury, Mo., will soon be in operation.

Mrs. Elizabeth D. Matz, wife of Herman L. Matz, vice-president of the S. S. Kimbell Brick Co., of Chicago, will receive \$500,000 from the estate of her father, John E. Dusenbury, former president of the First National Bank of Olean, N. Y. The estate was valued at \$2,000,000, there being four heirs.

The Noble Brick Co. held its annual meeting at Caldwell, Ohio, and elected the following officers: W. H. H. Jet, president; H. E. Matheny, vice-president; A. A. Adams, secretary; W. T. Crow, treasurer; and H. E. Matheny, manager.

Mr. Geo. C. Videtta, secretary of the American Pulverizer Co., East St. Louis, Ill., was married on the morning of Feb. 28th at Canton, O. They will be guests at the Congress Hotel, Chicago, during the Convention and Clay Show.

The Milton brick Company, of which Thos. M. Wilson is general manager, is installing a large outfit for paving and building brick at Milton, Pa. The plant will have a ca-

capacity of 100,000 per day and will be thoroughly modern throughout. The contract for the entire outfit of machinery was awarded to The Bonnot Company of Canton, O.

At the annual meeting of the Manufacturers' Bureau of Indiana, Melville W. Mix was unanimously re-elected president for the fourth time. Mr. Mix is president of the Dodge Manufacturing Company, extensive manufacturers of power transmission machinery, Mishawaka, Indiana, and one of the best known men in the industrial world. The Manufacturers' Bureau is made up of several hundred Indiana manufacturers, which is a very influential organization. Mr. Mix is one of the founders of the Efficiency Society and is prominently identified with the National Association of Manufacturers.

The American Fabric Belting Co., Cleveland, O., will be represented in Chicago during Convention Week by A. K. Kinley and H. G. Ross, who will be located at rooms 138-140 in the Auditorium hotel.

From Mexico City comes the information that Messrs. Manuel del Valle, Isidro Bisbal, Francisco Codinach and Ramon Bertram have formed an organization which will do business under the firm name of "Valle, Bisbal Y Cia." (Monte Alto Brick Co.). The company will manufacture partition tile and brick at the factory known as the San Andreas Ceramic Factory, which it recently purchased.

The C. W. Raymond Co., Dayton, Ohio, recently booked orders for soft mud outfits for the Pilot Butte Brick Co., Pilot Butte, Sask., Can.; James B. Oberly, Wilmington, Del., and J. Coughlan Sons, Vancouver, B. C., Can.; also stiff mud outfits for R. C. Remmey Sons Co., Philadelphia, Pa.; Granby Mining & Smelting Co., St. Louis, Mo., and the La Prairie Brick Co., La Prairie, Que., Can.; and a dry press outfit for the D'Hanis Brick & Tile Co., D'Hanis, Texas.

PLANTS AND ADDITIONS.

The St. Louis Chalk & Clay Co., at St. Louis, Mo., has been incorporated with a capital of \$2,000, to mine, manufacture and deal in all kinds of clay, chalk, etc. The incorporators are: James Walsh, A. C. Fitze and Julius Koenig.

The Electric Porcelain Co., at Macomb, Ill., is making preparations to make numerous additions and extensions to its plant in order to be able to supply the demand for its ware which has increased to a very great extent in the past few years.

The Commercial Club of Bryan, Texas, has closed negotiations with an out of town company to locate a brick plant in its home town. The enterprise will cost \$150,000 and will give employment to seventy-five men.

Henry Auchu, E. H. Hilliard, W. D. Parsons, B. W. Green and G. J. Smutz, at Emporium, Pa., will incorporate under the name of the Keystone Brick Co. to manufacture and sell brick, tile and other products made of clay.

The National Clay Products Co. has been incorporated at Baltimore, Md., with a capital of \$200,000.

The Composite Brick Co. has been incorporated at Jacksonville, Fla., with a capital of \$150,000. The business of the new concern will be to manufacture and deal in brick. The incorporators are: W. J. Carmichael, president, of Willoughby, O.; E. B. Wood, of Flint, Mich., vice-president; and C. F. Graves of Jacksonville, secretary and treasurer.

The East Bridgewater Brick Co., East Bridgewater, Mass., has been incorporated with a capital of \$6,000.

The incorporators are: A. Emond, F. H. Cushman, Carrie W. Flinney.

The Ironsides Pottery Co., Bordentown, N. J., has been incorporated with a capital of \$50,000, to manufacture pottery and earthenware products. The incorporators are: J. E. Norris, of Trenton; W. H. Cook, of Lawrenceville; J. R. Deacon, of Bordentown.

The American Porcelain Co., at New Brighton, Pa., increased its capital stock \$25,000. The money is to be used to increase the efficiency and capacity of its plant.

The Pennsylvania Pottery Co. will spend \$30,000 to improve its plants at Ford City and Kittanning, Pa.

The San Angelo Brick Mfg. Co., at San Angelo, Texas, increased its capital stock from \$20,000 to \$25,000. It is the plan of the stockholders of this company to enlarge the plant so it can keep up with the constantly increasing demand for its products.

The Concho Brick Co., at San Angelo, Texas, has been incorporated with a capital of \$25,000. The incorporators are: J. R. Nasworthy, W. Schneeman, Fred Beck.

The Biggs Brick & Terra Cotta Co., of Wilmington, Del., is planning to rebuild its plant which was burned down.

The plant of the Dows Brick and Tile Works, Dows, Ia., was destroyed by fire causing a loss of \$20,000. Insurance will be recovered. The plant will be rebuilt at once. The engine, reserve steam tank, pug mill, molds, elevators, steam pipes, presses, belts, tools, etc., are a total loss.

The Illinois Electric Porcelain Co., Macomb, Ill., is making plans for installing improvements to its plant, which will redouble its present capacity.

TEXAS.

Austin, Texas, Feb. 24.—During the month of January, building permits aggregating in value of \$2,225,196 were issued in the nine principal cities of Texas as compared with \$1,657,355 for the same month of 1912.

All of the large cities, with the exception of Dallas, Houston and San Antonio, show good gains over January a year ago. The increase made by Galveston was very notable. Building activity in not only the large cities, but in many of the smaller towns of the state, is keeping up the same lively pace that was set last month and the record for February promises to be much better than the same month a year ago.

The Coleman Vitified Brick Co. is preparing to enlarge its plant at Coleman, Texas, by the construction of six down-draft round kilns. These kilns will cost about \$10,000 and will give the plant a capacity of about 60,000 brick per day.

R. S. Root and associates will make improvements to their Denton pressed brick plant by adding ten new kilns, two large new presses, a new engine, a new drying room 150 by 600 feet with a capacity of 4,000,000 brick and the purchase of 28 acres of additional land containing clay deposits.

The Corsicana Brick Co. has let the contract for improvements to its plant which will cost about \$8,000. At a recent meeting of the directors the following officers were elected: J. A. Thompson, president; Richard Mayes, vice-president; Z. J. Pogue, secretary-treasurer. These officers are all residents of Corsicana, Texas.

The tax-payers of Waco have voted \$25,000 bonds for extending the sewer system of that city.

The Conchos Brick Co. will install a brick-making plant at San Angelo, Texas. The company has a capital stock of \$25,000. The incorporators are John R. Nasworthy, William H. Schneeman and Fred Black.

The city council of Nuevo Laredo, Mexico, has let a contract for the construction of a sewer system for that city.

Steps have been taken to establish a large brick and tile manufacturing company at Freeport, Texas. Experiments are now being made from clay taken from deposits in that section preliminary to beginning the work of erecting the proposed plant.

KANSAS AND THE SOUTHWEST.

The Salina Vitified Brick Co., Salina, Kas., has placed an order with the General Electric Co. for a 100-h. p. motor, which will replace the steam power formerly in use at this plant.

The Atchison Paving Brick Co., Atchison, Kan., is busy repairing its plant and getting its machinery ready for the coming season's run.

Prof. Teetor, formerly with the Bureau of Standards at Pittsburgh has been placed in charge of the clay laboratory at the Kansas University, at Lawrence. Prof. Teetor is well equipped for the work, as after graduating at the University of Illinois he spent a year or so in actual work at clay plants in Illinois. He will be assisted by J. S. Altman, of Denver. The principal work of the department will be the testing of Kansas clays.

With the expectation that there will be more brick buildings erected this year than ever before in Hastings, Neb., and throughout the state, the various brick yards of Hastings are making preparations to burn more brick this year than in any previous season.

OHIO.

Columbus, Ohio, Feb. 26.—With the advent of pleasant weather, which foretells the coming of spring, the brick industry in the Buckeye State is becoming more active. The demand is good for all kinds of brick, including face, pavers and common brick. Practically all of the factories located in the Hocking Valley and other portions of the state are busy adding to their stocks and most of the plants already have large supplies on hand.

The indications are especially bright for active building of smaller structures. This is noted not only in the larger cities, but also in the smaller places. Architects and contractors have been busy with plans and specifications and the net result is activity in all building trades.

Business conditions generally are satisfactory. Manufacturing is prosperous and the same is true of both wholesale and retail business. All goes to make a condition which will mean a more extensive market for brick and other clay products during the coming summer.

Shipping is going on rather actively. Orders are being received from all parts of the territory covered by Ohio firms and many of the orders are accompanied with a request for immediate shipment.

Some labor trouble has occurred in some of Ohio plants, but not sufficient to affect the trade in the least. The indications are bright for an early settlement of the labor difficulties.

Many of the manufacturers located in Columbus sent samples of their brick by parcel post to be used in the Clay Products Exposition at Chicago.

The Cleveland Pottery & Tile Company of Cleveland, Ohio, was incorporated with a capital of \$10,000 to manufacture tile and pottery of all kinds. The incorporators are George Cook Ford, John H. Watson, Jr., M. G. McAllerman, B. E. Robertson and P. M. Alden.

The following directors were elected for the coming year by the Coshocton Brick Company of Coshocton, Ohio, recently: B. F. Cotter, Myrtle Cotter, R. M. Love, Joseph Love, A. W. Holmes, J. D. Severns, John R. Turner.

E. C. Carr, Jr., son of Dr. E. C. Carr, of Coshocton, has resigned his position with the Metropolitan Brick Co., of Canton, Ohio, to become manager of the Wooster Shale Brick Co. at Wooster, Ohio.

The Brick-Builders' Supply Company, of Columbus, which has offices on the sixth floor of the Ruggery Building, is doing considerable unique advertising which is bringing results, according to J. M. Adams, general manager. The advertisement shows the relative cost of a dwelling constructed of clapboard, shingle, 10-inch brick wall with air space, brick and hollow block, stucco and hollow block and brick veneer. The figures shown are the average bids of five contractors on the various materials made in Cleveland. The figures showed very little increase in cost of the 10-inch brick wall with air space

over the other forms of construction. The ad called attention to the extra cost of upkeep in frame dwellings.

There is every indication for an active demand for paying brick as arrangements are being made by municipalities, counties and states for a large amount of street and road improvement. Preliminary legislation is being disposed of early and it is expected that just as soon as the weather is good the work of construction will start.

George J. Markley, one of the leading citizens of Mineral City, O., has started to work out a plan to make Mineral City a brick manufacturing center, just as East Liverpool has been made a pottery center and Pittsburgh, Pa., an iron and steel mill center. It has been pointed out by this advance agent of prosperity that Mineral City possesses the raw materials, and that it has abundance of coal right at its doors. Mr. Markley has just issued a public statement calling for the support of all "live" business men of Mineral City (and he specifies that "dead" ones are not desired) to join with him and secure for the town as many new brick plants as possible. This town is on the Baltimore & Ohio Railroad and the Ft. Wayne road. It is located in Tuscarawas county, one of the greatest clay producing counties in Ohio.

At West Lafayette, O., on the Pan Handle Railroad, a concerted movement has been started to boost the erection of new clayworking plants in that locality. City Councilman Benj. Stoneburner has just had various clays of that district analyzed and burned at Roseville, O., a pottery manufacturing town, and good results were obtained. The Pennsylvania Railroad is building a new branch out of West Lafayette, and it is planned by the West Lafayette business men to have a number of clayworking plants located along that right-of-way.

At the annual meeting of the Alliance Brick Co., which was held a few days ago, the financial report showed a gain of \$18,000 in sales over the previous annual report. The following board of directors were elected for the fiscal year: F. A. Holmes, J. A. Jones, W. H. Purcell, R. M. Scranton, E. L. Guthrie, Fred Zurbrugg, L. W. Lewis, D. W. Crist and W. E. Dunning.

W. B. LaPorte, of Strasburg, Pa., who was associated with the Dover Fire Brick Co., has severed his connection with that company and is now manager of the plant of the Camp Conduit Co., a large brick manufacturing company of Cleveland, O.

The plant of the Fisher Veneer Tile Manufacturing Co., at Zanesville, O., has been bought by William H. Weller for \$3,125. The plant has been in the hands of a receiver.

Announcement has been made of the death of Samuel D. Manor, aged 84 years, at Empire, O. He died at the home of his daughter in Wellsville, O., and was one of the oldest of the old-time Ohio valley brick manufacturers.

Work has been about completed on the third story of the new plant of the Kaul Clay Co.'s plant at Toronto, O.

It is reported that the Shepher Clay Products Co., of Sugar Creek, O., is seeking a southern location upon which to build an additional clay manufacturing plant.

Samuel Austin & Sons Co., of Cleveland, O., have been awarded the contract for the construction of a brick bottle factory at Redcliff, Alberta, Canada. Canadian brick will be used in this construction.

J. M. Cooper, retired, admitted to have been the pioneer in the brick manufacturing business in the Uhrichsville, O., district, died at his home there after a three years' illness. He formed and operated the Diamond Sewer pipe plant there, which was the first plant to be built in that locality. This property was taken over by the American Sewer Pipe Co., of Akron. Mr. Cooper was retained as district manager. He retired from active life a few years ago. He was also president of the Commercial Bank of Uhrichsville.

Managers of the new clay plant at Sugar Creek, O., which is in the vicinity of Canal Dover, O., have placed the contracts for their entire equipment of machinery. Analysis of the clay held by this company was made at the plant of the C. W. Raymond Co., and this report in part was submitted: "You are certainly to be congratulated on the clay you hold. It seemed to us just a little better than we had ever handled." Samples of the brick made from this clay have been shown Pittsburgh, Pa., and Cleveland, O., contractors, with the result that the Pittsburgh company immediately placed an order for 2,000,000 pavers, to be delivered as soon as possible. This

new firm will be known as the Sugar Creek Clay & Coal Co. and has a capital stock of \$50,000.

ST. LOUIS.

St. Louis, Mo., February 26.—There is a quietness prevailing in the clay working industries at the present time. A majority of the brick and fire clay plants which shut down during the holiday season have continued idle during the greater part of January and February. While closed down, necessary repairs and improvements were made. Some are beginning to resume operations, but on a small scale. According to brick manufacturers in this district, January or February did not produce a great volume of new orders, but inquiries indicate that with the opening of the spring season, the manufacturers will book enough orders to keep their plants in steady operation until next winter.

Building operations in St. Louis show a large decrease from the operations of January, 1912. The estimated cost of new buildings and alterations for which permits were issued last month fell short \$2,801,163 of the mark for the corresponding month of last year. The total estimated cost of permits issued in January, 1912, was \$3,418,032. The permit for the new 21-story Railway Exchange Building for \$2,600,000 was taken out in that month. The total estimated cost of January, 1913, was \$618,869. Last January 395 permits for new buildings and operations were issued, as compared with 410 of January, 1913. Of the 410 permits issued last month, 104 called for brick structures at an estimated cost of \$503,388 and 123 permits for frame and other structures at an estimated cost of \$21,388. The activity in building small stores was noticeable, forty-seven permits being taken out for this class of building.

Spring, it is predicted, will be signalized by a burst of activity in St. Louis County, which the automobile has made available for homes for the wealthier classes. There has been recorded many sales of tracts in this locality which will be converted into residence parks.

The Clay Show at Chicago has roused a great deal of interest among the clayworkers of St. Louis, and a number will have their products on display. One would think that the clayworkers had deserted St. Louis, as a majority of them have left to visit the annual show.

Dr. J. C. Parrish, representing the Audrain Coal Co. of Vandalia, Mo., who for weeks has been in St. Louis negotiating the sale of coal and clay leases owned by his company, has announced the closing of a deal with the Laclede-Christy Clay Products Co. of St. Louis, by which about 300 acres of coal lands in northeast Missouri, overlaying a rich vein of fire clay, are transferred in the deal. Dr. Parrish declined to make known the consideration.

With the sale the Laclede-Christy Co. is given an option on twenty-five acres of ground in case that company should decide to establish a plant at Vandalia. For the present, the fire clay will be shipped to the St. Louis factory of this company. The land lies near Vandalia, about 100 miles northwest of St. Louis, according to Dr. Parrish, the only clay stratum is from 20 to 30 feet thick and the coal vein about 30 inches thick.

At the annual election of officers of the Hydraulic-Press Brick Co., held on January 28th, the following officers were appointed to serve the ensuing year: Geo. A. Bass, president; Ralph Simpkins, vice-president and secretary; Geo. F. Baker, treasurer and auditor; F. W. Miles, general manager, and F. Aschemeyer, sales manager.

It is thought that the year 1913 will see St. Louis clay products advertised more extensively than in the past.

Several of the sewer pipe companies have found during the past year that the motor truck enables them to deliver their ware more promptly, and with less cost than the horse and wagon. The Blackmer & Post Pipe Co. has four trucks in steady operation and the Laclede-Christy Clay Products Co. has three.

The Board of Public Improvements has recommended forty-four drafts of ordinances for street and alley openings and improvements. Nine of the ordinances were for the opening of streets and alleys at a cost of \$96,232. The total estimated cost of the improvements recommended other than street or alley openings is \$322,825.

The brick paving and reconstruction authorized alone would cost \$255,129, according to the estimate given the improvement board.

Twelve women and two men were seriously injured and several others hurt when the concrete floor of the vestibule in the Cabanne Methodist Church collapsed on Monday afternoon, February 10th.

The Hydraulic-Press Brick Co. reports that the situation with them is not very active at present. All of their plants have undergone repairs, and will soon be in operation. They report the prospects as fine, and see no reason to look for anything but a very fine year's business.

The Progress Brick Co. is doing a fair business, and state that while there has been no great activity, they have had a very nice demand. The indications look favorable for the future.

The Evens & Howard Fire Brick Co. is doing a fair business in sewer pipe and wall and coping tile now, but the season is scarcely advanced enough for anything like a big business.

The Winkle Terra Cotta Co. is doing a fairly active business now. It is operating about as usual at its plant. The demand for terra cotta and other lines has been quite active of late, and the prospects look favorable for the coming months.

The Mitchell Clay Mfg. Co. report a very pleasing demand for their lines. They are operating their plant to capacity, and are doing all that is possible to take care of the business that is coming their way. The prospects look most gratifying to them.

The Laclede-Christy Clay Products Co. states that there has been a fair call for sewer pipe, flue lining and fire brick. The indications offer a very pleasing prospect for more business soon.

PHILADELPHIA.

Philadelphia, Pa., Feb. 25.—Perry Lukens of the local branch of the American Sewer Pipe Co. filled a large order for 8,500 30-inch sewer pipe for Bridgeton, N. J. It took 85 cars of pipe for an intake made there to bring the water from the lake to a basin. The company recently filled an order for 115 cars of sewer pipe for Millville, N. J. This firm also makes a fine grade of fire brick, face brick and a fine paving block. The latter are very popular and at one time they had orders on hand for 4,000,000 block.

The Philadelphia Fire Proofing Co., of 343 Arch street, is paying special attention to hollow tile work. They are contractors and not manufacturers of clay products.

Secretary Carter of the Builders' Exchange of Buffalo, N. Y., says there is a lack of bricklayers in that city and the brick supply is limited to about 60 to 70 per cent of what the demand calls for. This is due to the fact that the manufacturers are unable to turn out a supply commensurate with the demand. One reason for this is that labor is scarce.

There has been a scarcity of labor among the clay-working trades and other lines here, which has interfered considerably with production. There is considerable building going ahead here, and the open winter has enabled the contractors to keep right on with their work throughout almost all the winter months.

The Sayre & Fisher Co., of Sayreville, N. J., with a Philadelphia office, reports the sales of front brick better than ever, and prices firm on all product turned out.

T. B. Amiss, Jr., who formerly traveled the south for the Hydraulic-Press Brick Co. of Baltimore, Md., is now in charge of the Baltimore sales office.

The Biggs Brick & Terra Cotta Co. of Wilmington, Del., will rebuild its plant, which was burned some time ago.

Donahue & Nolan of Trenton, N. J., have been running their plant to capacity on red repressed brick, for which there has been an increased demand. They are becoming more popular for decorative work.

The Eastern Brick Co. of this city has had some large contracts for red repressed brick and roofing tile. The company has also taken the agency for the Spring Gar-

den Brick Co. of York, Pa., for its Kittanning and iron spot brick.

The Glen-Gery Brick Works of Reading, Pa., has arranged with the Reading Railroad for additional sidings.

The Pennsylvania Fireproofing Co. of St. Marys, Pa., is building a new brick plant with a capacity of 50,000 brick.

James G. Goulding, secretary and treasurer of the Trent Brick Co., and William Cooper, manager of the Enterprise Pottery Co., both of Trenton, N. J., died recently.

C. B. Cook and Daniel Keough of Windber, Pa., have leased the plant of the Kelley Brick Co. of that city, have made improvements and may later buy the plant.

Edward Stokes of the Harrison building is doing a large sewer pipe business through the south and has plenty of orders ahead.

The Milton (Pa.) Brick Manufacturing Co. is building a large plant, to have a capacity of 150,000 brick a day. It is expected the plant will be ready for the spring season.

O. W. Ketcham of the Builders' Exchange says he has some nice jobs calling for their own make of agert terratile, which is a new product, made at their terra cotta works. It is a rough antique, varicolored, clay shingle tile. Some of the jobs calling for this product are residences of Charles A. Gould of Greenlawn, Long Island, N. Y.; C. P. Huntingdon, Locust Valley, Long Island, N. Y.; W. O. Chapin, Buffalo, N. Y., and a clubhouse for the Democratic club of Wilmington, Del. Mr. Ketcham says the local building laws do not allow the building of terra cotta fireproof buildings, but all buildings must have solid walls. He says the city will come to this later on, as many houses throughout the country are built of hollow tile and have proven successful.

The Mount Union (Pa.) Refractories Co. was incorporated for \$300,000, with R. P. M. Davis president and general manager; F. D. Hallstead, secretary and treasurer; W. Hickman, superintendent; Wilson Kistler and P. P. Griffin with the officers as directors. Mr. Davis and Mr. Hickman were with the Harbison-Walker Refractories Co. and Mr. Hallstead was secretary-treasurer and general manager of the Queens Run Fire Brick Co. They have a good supply of ganister rock near Mount Union and are building a plant to manufacture silica and magnesite brick. The Mount Union silica brick is famous for its purity. The plant will be of brick and steel construction, with a capacity of 80,000 brick a day.

NEW YORK.

New York, Feb. 25.—The Eastern situation is nervous, but still firm. When we say that we say all. But it needs elucidation.

Chicago has been called the heart of the country. New York might, in the same analogy, be called the nerve center of the country. In the human body when the nerves are affected, it does not necessarily follow that the heart has become weakened. In fact, a powerfully pulsating heart may produce nervousness. That is practically what has happened. The heart of our national prosperity is beating at a healthy pace. The country is in a normally healthy condition, but suddenly there has been detected a nervous twinge that is noticeable to many, although not necessarily alarming.

In the national body the third most important function is known as the clay industry. It is in this region that the greatest nervousness is being felt. We shall analyze it.

The eastern, and a growing part of the western, clay industry is directly dependent upon the steel industry for its prosperity. At the present time the steel industry is booming. Orders have been booked for twelve months ahead, or into February of 1914. The big steel companies, even with increased capacity thrown in, are scarcely able to reduce the unfilled tonnage of more than seven million tons reported on January 1. During the month of January it was able to cut into this mountainous tonnage only by 700,000 tons. February specifications, while less than those of January, were larger than any

other month in 1912, excepting September, despite the fact that February is the shortest month in the year and has two holidays besides. Then, let us recall, the independent steel companies put up the price of steel while the United States Steel Corporation, known as the trust, kept the prices steady at December levels, despite terrific pressure and a stiffening tone in the contracting market.

Now, then, what is this whispering we hear among retail brick distributors, the questioning between one brick distributor and another, this quiet talk among manufacturers? Let us step nearer that we may get the trend of thought. "What's the matter with sales?" asks the dealer. "What's the matter with demand?" asks the distributor. "How do you feel about the coming season?" asks the manufacturer.

The answers? They are given in shrugging shoulders and the next morning these same men eagerly pick up the newspapers to see "what has happened over night." This is what they see.

There across half the page is a heading conveying the information that the United States may intervene in Mexico. In the next column a special dispatch from Albany says that the legislature is going to put the screws on the stock exchange, they want to incorporate it and they want to regulate it and they want it to bend its policy, rigidly maintained for generations, to suit the public clamor. Next in order is that big black face column heading saying that New Jersey is going to pass Governor Wilson's Seven Sister anti-trust bills. Down below that, but spreading across two columns is a story from Washington announcing that certain business-curb-ing legislation will be introduced by President Wilson's new cabinet; and the afternoon papers come out with a three-inch red lettered heading announcing that another brigade has been ordered to the Mexican border, and directly under this is the story that a brick house is to be sent to the big Clay Products show in Chicago by parcel post.

Do we fully grasp the significance of the last named dispatch; about that brick house going through the mails while shudder-producing news besmears the first page? Here it is: That brick house will have been born in the twenty-thousand brick manufacturing plants in the country, running full tilt, or to run full tilt when weather conditions permit, despite the rampant chord of the jingoists and the strident notes of the alarmists the country over. This brick house will be carried back to the heart of the country on as healthy a flood tide of red and white corpuses as ever flowed through the industrial veins of the country, intervention or no intervention, whether the stock exchange is incorporated or not, whether anti-trust legislation goes through or halts on the legislative sills of the National Capital; whether the East has financial nervous prostration or not. Why? Because the steel market is firm and rising, both as to demand and as to prices, and "As goes steel, so goes Prosperity."

They said that the Pujo Money Trust investigation, the late presidential campaign, the anti-trust suits; all would throw the country into the slough of despond. Did it? Does the advance in the cost of building materials since last October, amounting in the aggregate to eighteen per cent, indicate that the country is verging upon panic conditions? Does \$39.50 steel look like panic conditions when in the height of the prosperity of 1906 it reached \$31 and was considered abnormally high. Does dollar cement look like panicky conditions when during the height of the prosperity of 1909 it was seventy cents at Lehigh valley mills? Does lumber flying high under a decreasing supply and an increasing demand reflect panic conditions when quotations have been marked up more than twenty-five per cent, within the last half-decade? Does it look like panic conditions when common north river hard brick ride on a stiffening market when every dealer in a great city like New York can draw upon his yard stacks or demurred boats?

Great money lending companies, great security markets, great investment companies, are not showing signs of nervousness, even though big stocks like that of the Express companies drop to unprecedented low levels while they tote a brick house through Uncle Sam's mail bags, the while getting down to a square deal for the man who has been bled systematically to keep these same stocks high in the past. Do we find any disposition

among real estate investors to keep out of the market? In the New York market alone in the week ended February 20, the total number of conveyances was 160 as against 139 in a corresponding week last year representing a total value of \$12,610,202 as against \$9,431,500 of the corresponding week a year ago. Is money tight? Look at the fact, from official records, that the number of mortgages recorded in the same week, that ending Feb. 29, 1913, was 147 as against 71 in the corresponding week during 1912 with a difference in favor of this year of nearly nine million dollars.

Wherein, then, does the nervousness thought to be general throughout the eastern clay market exist? There is no logical cause for it, save that those who give heed to surface conditions only are nervous. Basic conditions reveal no cause for nervousness. Money has already discounted ethereal possibilities of calamity as shown in the fact that mill stocks are universally low and the spring business will open in another fortnight with capacity based close to demand. The speculator is entirely out of it. The long headed, conservative business man has, at last, come into his own.

PITTSBURGH.

Pittsburgh, Pa., Feb. 23.—According to a report heard in the local district, French capital is back of new plans of the Montello Brick Co. at Reading, Pa., which has been augmented by the addition of \$500,000.

The Savage Mountain Fire Brick Co. plans to operate an additional brick plant located on Georges' Creek, near Frostburg, Md., at an early date. John A. Caldwell is president of the company, and W. F. Caldwell of Philadelphia, Pa., is general manager.

The residents of a town in the vicinity of Titusville, Pa., named "Tarpedo" are much pleased over the new industry to be established there, the new plant of the Warren Silica Brick Co. The plans for the new plant have been completed, and the construction will progress as speedily as the weather will permit.

Plans have been perfected to form a new company to take over the plants of the Rees-Hammond Brick Company, of Bolivar, Pa., and the plant of William F. Soisson, of Connellsville. The new concern will be known as the Joseph Soisson Brick Co. Its general offices will be in Connellsville, and it will have a capital stock of more than \$1,000,000. The new concern will have ten plants thoroughly equipped to manufacture brick, located in Fayette and Westmoreland counties. Fire brick, paving brick and building brick will be the principal output of the new company.

An immense fire clay industry is to be developed along the line of the proposed Altoona Northern R. R. James A. Page of Altoona, Pa., general manager of the A. J. Haws & Sons fire clay operations in various portions of Cambria county, says that the drift that he proposes to promote will begin at Dougherty's and extend for 1.5 miles in the direction of Green Springs and will take a year and a half to complete.

All haste is being made to complete the new plant of the Shawmut Paving Brick Co. at Ridgway, Pa. It is possible the works will be placed in operation within a month or so. The company plans to do a large business this season and a number of orders are already sight.

The Pittsburgh Fire Brick Co. has been formed with a capital stock of \$25,000. The incorporators are J. A. Hunter, Pittsburgh; J. S. Skelly, Monaca and I. W. Brison, Aspinwall.

Tentative plans have been thought out for the plant of the Royalton Shale Brick Co. at Royalton, Pa. Details have not been worked out, though two additional kilns are now being built.

The Borough of New Hope, Pa., has granted a franchise to the New Hope Shale Brick Co., from taxes for ten years if the plant costing \$200,000 on the company now has the material.

Notice has been received from the name of the Hill & Sons Brick Co. has been changed to the Hill & Sons Brick Co.

DETROIT.

There have been advances in quotations on crude oil and in the last Detroit letter to "Brick and Clay Record," it was shown that prices on stocks would be advanced before the spring building season opens. These advances are certainties now, a number of manufacturers interviewed expressing the opinion that taking into consideration the various conditions that enter into the manufacture of brick, manufacturers can not afford to sell at the prices which prevailed in 1912.

There has been considerable relief in the freight situation in Detroit during the past month. The Michigan Central Railroad Company, because of an embargo on all shipments coming via Toledo, made in the early winter, has been able to take care of receipts and shipments from Detroit very promptly during the winter, and the other transportation companies have also shown a better disposition. In some parts of the state, however, there have been numerous complaints, but conditions cannot be rectified until extensions are made or new lines built. There has been considerable talk of having the state take over the Pere Marquette railroad. This railroad runs directly through the brick producing district of Detroit and it also taps a number of cities that are prominent in the brick manufacturing industry of the state. Governor Ferris made the suggestion and there is a possibility of action by the present legislature in favor of the proposition. The Pere Marquette has not given satisfactory service to various districts and were it to be taken over by the state it would give manufacturers in some sections of Michigan the opportunity to get better service.

Brick manufacturers in Detroit are keenly interested in a project to run a crosstown line through the western part of the city. Ninety-five per cent of the producers in this district are located in what is known as Springwells—this being in the western part of the city—and their workmen are without transportation facilities of any kind, unless they desire to go all the way down town on a through car and transfer to a line that will take them within six or eight or ten blocks of their homes. This means considerable time and it is also most inconvenient. The proposition now before the people is to have a crosstown line that would enter the brick manufacturing section and give the hundreds, yes, thousands, of men employed there an opportunity to reach their homes at a decent hour and also give them an opportunity of getting to work without arising at 3 o'clock in the morning and setting out before the chickens are awake. A number of the brick makers were represented at a meeting held in the mayor's office to listen to objections to the scheme.

At the annual meeting of the stockholders of the Mt. Clemens Brick & Tile Co., the following were chosen to act as directors: T. VanDamme, F. G. Kendrick, Frank Ameel, William Nicke, Herman Behnke, Fred Gratopp and F. B. Schott. Reports read showed the company to be in a very prosperous condition and the prospects are that 1913 will be the best year in its history.

INDIANA.

Indianapolis, Ind., Feb. 24.—While the brick trade is not exceptionally heavy at the present time, indications point to a prosperous year. Most of the brick plants over the state are busy and the manufacturers report they are receiving many inquiries and are getting some nice contracts. Altogether, they say the outlook for the future is much brighter than it was at this time last year. The open winter, to February 1, made it possible for building construction to continue uninterrupted. Brick prices are strong and the brick manufacturers and dealers say there are no indications of a price reduction in the immediate future.

Charles M. Cooper, an attorney, has returned from Washington, where he appeared before a congressional committee to urge that the present tariff on tile be continued.

George C. Hearle, a capitalist of this city, and other prominent business men are preparing to finance a com-

pany to manufacture vitrified hollow brick silos. Headquarters will be maintained in this city, with plants in three different states. Definite plans are to be announced within a few weeks, according to Mr. Hearle.

Thomas Kerins, who for nineteen years was superintendent of the Indiana Paving Brick Co.'s plant at Brazil, died at his home in that city in December. Death was due to paralysis of the lungs. He was a member of the Brazil city council six years and was at one time a member of the fire department.

L. C. Lillard, M. E. Hollenbeck and H. M. Lillard have organized the Fairmount Tile Works at Marion and will engage in the manufacture of tile. The company has been incorporated with an authorized capitalization of \$36,000.

The clay plants at Brazil are preparing for a vigorous season. A number of the plants have closed down to make needed repairs in anticipation of an unusually busy season, among the number being the Brazil Clay Co., the Sheridan Brick Co., and the American Sewer Pipe Co.

The Fort Wayne Brick Co., of Ft. Wayne, has increased its capital stock from \$36,000 to \$100,000, and will devote the additional capital to improving its plant. All of the new stock was taken up by the stockholders and none of it is on the market, showing the healthy condition of the company's affairs. At the annual meeting of the company Henry Hilgemann was elected president; Max Irmischer, vice-president; Henry Keller, secretary and treasurer, and Ed. C. Miller, general manager. The officers, with Henry Wehrenberg and John Sulzer, form the board of directors. During 1912 the company spent \$50,000 in improvements and additions and is now installing machinery for the manufacture of hollow tile. With the extensions planned, the plant will be one of the largest exclusive manufacturers of brick in Indiana. Its output last year was over 7,000,000 brick.

NORTHWEST.

The Atlantic Terra Cotta Co., of New York City, through their agents, the Union Railway Storage Co., 338 Security Bank building, Minneapolis, furnished the terra cotta for the St. Paul Bread Co.'s new bakery, covering one-half block. The entire outer surface of the four sides of the building is of white enameled terra cotta, and is one of the largest contracts for architectural terra cotta that has been let in the Northwest for a number of years.

As an incentive, for a number of years past, the Heron Lake Brick & Tile Co., of Heron Lake, Minn., has paid its workmen a bonus of twenty-five cents a day, for working steadily through the season. The excess is paid them at the end of the season and affords a snug little extra amount.

A. I. Hunter, president of the Red River Valley Brick Co., Grand Forks, N. D., and Louis Campbell, secretary and manager, have resigned their positions. Both have been connected with the business since 1902. Mr. Hunter finds his other duties so pressing that he is unable to spare the additional time. Mr. Campbell goes with the W. P. Aslop Co., of Winnipeg, as assistant general manager. J. R. Poupore was elected president; A. I. Hunter, vice president; Miss Lizzie McGlone, secretary; and the board of directors is composed of J. R. Poupore, A. I. Hunter, W. P. Aslop, James Dinnie and M. J. Moran. The output of the company for the year was 6,000,000 brick, shipment being made as far as Fort William, Ont.

The Standard City Co., Perkins building, Tacoma, recently furnished 175,000 brick for the construction of the Northern Pacific paint shop at South Tacoma. The same company has just furnished the last of the 900,000 paving brick for work at Bremerton, Wash.

H. S. Wheeler, of the Far West Clay Co., Tacoma, returned last week from a six weeks' visit to Middle West cities, his trip taking him as far east as Cleveland. He states there is a great industrial expansion feeling in the very atmosphere of the manufacturing centers, and that tariff tinkering does not seem to deter the going ahead with plans for the next year or two.

05
CONVENTION WEEK NUMBER

BRICK *and* CLAY RECORD

LOS ANGELES PRESSED BRICK CO.
LOS ANGELES CAL.



EXHIBIT AT SECOND ANNUAL CLAY SHOW, 1913.

Vol. XLII, No. 6

CHICAGO, MARCH 15, 1913

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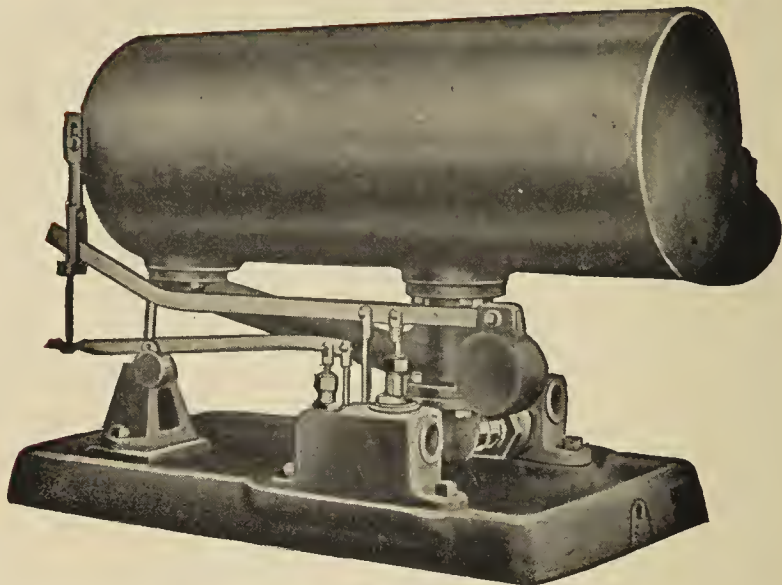
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CHICAGO, MARCH 15, 1913

Number 6

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GENERAL VIEW OF CLAY SHOW FROM SOUTH BALCONY





VOL. XLII.

CHICAGO, MARCH 15, 1913

Number 6

350,000 VISIT BIG CLAY SHOW; HARMONY, N. B. M. A. KEY NOTE

**Both Great Events Pour Army of Boosters for Clay Products Into Nation—
Various Conventions Are Marked by Profitable Sessions—Rogers
Heads Parent Body—B. B. A. Gets Fresh Impetus**

Footsore and weary, but not bored, 2,000 clayworkers—delegates and visitors to the various conventions that held forth during the last week of the Second Annual Clay Products Exposition, from March 3 to March 8, returned to their homes, each carrying with him the recollection of the most successful, the most profitable and the most harmonious sessions ever held in the history of the clay product associations.

Saturated with the knowledge that burned clay makes the best and the cheapest of building and constructive materials and the most plastic and useful of Mother Earth's bountiful resources, more than a quarter of a million Clay Show visitors returned to their homes—each a spokesman and an advocate.

It was a great period—those eleven days in which the Exposition and the conventions held forth, and those two mighty armies—the delegates and visitors to the conventions and the prospective builders of homes, skyscrapers and factory structures, who viewed the world's greatest industrial exposition, will give burned clay a boost such as no one industry ever had.

Harmony was the keynote of the various conventions, and so smoothly did the sessions of the associations run that more work was accomplished in a given time than has been known at any previous occasion.

There was not a discordant note in the entire

week. There was not a single unpleasant incident, nor a dull moment, nor a dissatisfied or disgruntled delegate. There was unity in action, unity in thought, unity in purpose.

Clayworkers had learned the lesson of concentrated effort—the value of a common cause, in the twelve months passed, and where differences existed the soothing salve of charity, generosity and unselfishness was applied, and lo and behold—the tender wound was healed!

Beginning the year with such a start as this, the clayworkers of the nation may have great hope in the future of the industry.

Obstacles that have seemed almost insurmountable easily will fade away even as the mirage on the desert.

Herculean tasks that appeared impossible of accomplishment will be done and movements launched by a united industry that will bring burned clay into its own—the position of supremacy among constructive materials.

To many is due the credit for this gratifying condition. No single person may lay claim to the honors. Whatever has been done and whatever will be done has and will come

from a universal desire to drop petty politics, to leave behind selfish motives, to forget individual interest and raise in their places the banner of a common cause—the good of the industry.

Next year's conventions—wherever they may be held, will be even greater in the work they will ac-

Nutshell Facts of Big Week

CLAY SHOW ATTENDANCE—
350,000.

CONVENTION ATTENDANCE
—N. B. M. A., 745 registered;
unregistered, 250; other con-
vention delegates and attend-
ants, estimated, 1,000. Total
convention attendance, 2,000.

CONVENTIONS IN SESSION—
N. B. M. A.; N. P. B. M. A.;
B. B. A.; A. F. B. A.; N. C. M. A.;
Denison Licensees' Associa-
tion; Canadian C. A.; Wiscon-
sin, Iowa, Illinois Associations.

ASSOCIATIONS FORMED—Tri-
State Dealers Association; Na-
tional Fire Brick Association.

CONVENTION WEEK KEY-
NOTE—Harmony.

ELECTIONS—W. H. H. Rogers,
president N. B. M. A.; C. J.
Deckman, president N. P. B.
M. A.; William Hanley, presi-
dent B. B. A.; L. G. Kilbourne,
president A. F. B. A.; Geo. B.
Drennan, president N. C. M. A.



comply, for twelve months of concerted action will have passed and clayworkers will have something to show for their unselfishness.

Summing up briefly the work of the eleven days in Chicago, here is what was done:

THE CLAY SHOW

It brought together the greatest display of clay products the world ever has seen.

It sent converts by the thousands out into the world to talk burned clay and to use it.

It opened up new possibilities for publicity work of a still greater nature.

It made practical an exchange of ideas in manufacturing, salesmanship and methods.

It paved the way for a great permanent building of clay products at the Panama Exposition.

THE CONVENTIONS

They taught those that participated the possibilities of harmonious action.

They opened up avenues of discussions in all the branches of the industry.

They solved many perplexing questions in the manufacture and selling of clay products.

The 1913 Clay Show is closed.

The 1913 Conventions are a part of history.

The successful and progressive business man lives in the future. He turns his back on the mistakes of the past—he covers up the errors he has made with the good resolutions of today and places the mantle of forbearance over the enemies he has encountered.

Clayworkers, look forward! There is a rosy-hued horizon ahead, and the journey is not far nor is it difficult.



Beautiful Display of Encaustic Tiling Made by the American Encaustic Tiling Co., Zanesville, Ohio. One of the Most Admired Exhibits at the Show.

N. B. M. A. ELECTS W. H. ROGERS, PRESIDENT

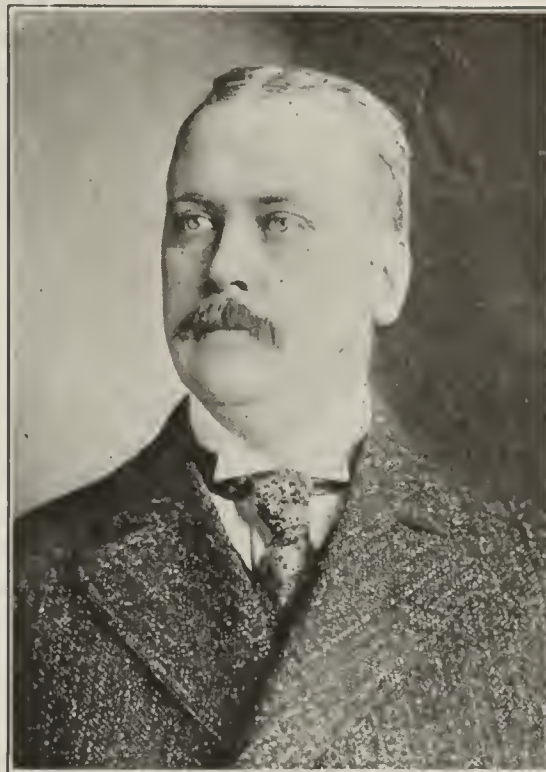
Chooses First Vice President, According to Custom, in Most Harmonious and Profitable Convention Ever Held by the Organization



T. A. Randall, Re-Elected Sec. N. B. M. A.



W. H. H. Rogers, Elected President of the N. B. M. A. for 1913.



J. W. Sibley, Re-Elected Treas. N. B. M. A.

W. H. H. Rogers, of Rochester, N. Y., will head the 1914 National Brick Manufacturers' Association, he being elected in accordance with the custom of the convention at the first session of the twenty-seventh annual meeting Wednesday, which gives the presidency to the first vice-president.

Secretary Theodore Randall, editor and publisher of the "Clayworker," Indianapolis, and secretary ever since the organization of the association, was re-elected as a special tribute to his faithfulness and ceaseless energy.

The other officials were retained, the vice-presidents moving up one position. The only new officer was C. J. Deckman, of Cleveland, Ohio, who was given the post of third vice-president, made vacant by the succession of C. P. Mayer.

Before the opening of the convention Wednesday the Kilties Band of Canada gave an impromptu concert in the headquarters of "Brick and Clay Record," and then marched to Convention Hall, followed by a large delegation, where another concert was rendered, Yankee Doodle Dandy being the air played in the initial number of the program.

The opening of the convention was preceded by a concert in the parlor lobby by the Kilties Band of Canada. This drew the crowd from the first floor to the convention room.

Following the invocation, the brick manufacturers were welcomed to Chicago by Attorney McGann, from the office of Mayor Carter Harrison. This was followed by President Charles A. Bloomfield, of Metuchen, N. J., presenting his annual report. The report of Treasurer John W. Sibley, of Birmingham, Ala., was also read.

The election of officers resulted as follows:

President—W. H. H. Rogers, Rochester, N. Y.
First Vice-President—Eben Rodgers, Alton, Ill.
Second Vice-President—C. P. Mayer, Bridgeville, Pa.
Third Vice-President—C. J. Deckman, Cleveland, O.
Treasurer—John W. Sibley, Birmingham, Ala.
Secretary—Theo. A. Randall, Indianapolis, Ind.
Assistant Secretary—A. M. Wallace, Indianapolis, Ind.
Committee on Technical Investigation—W. D. Richardson, Columbus, O. (term expires 1917); Prof. A. V. Bleining, Pittsburgh, Pa. (term expires 1916); Prof. Ross C. Purdy, Worcester, Mass. (term expires 1915); D. V. Pur-





ington, Chicago, Ill. (term expires 1914); Prof. Edward Orton, Jr., Columbus, O. (re-elected; term expires 1918).

There was a wide difference of opinion among members of the National Brick Manufacturers' Association regarding the particular city in which the organization should meet next year. Some favored the selection of some eastern metropolis, while others declared that a central west city, Chicago excepted, should be chosen, and then again other members favored New Orleans or Birmingham, Ala., Secretary Randall being among those who were inclined to New Orleans. Here are a few opinions:

John W. Sibley, treasurer, N. B. M. A.—“There are several very potent reasons why the convention of 1914 should be held in Birmingham. The industrial and agricultural resources of the south are rapidly developing and each year is witnessing the commercial expansion of the New South. The land of Dixie is fertile soil for the brick industry.”

W. L. Sibley, member of N. B. M. A.—“The Chamber of Commerce of Birmingham extended a cordial invitation to this association to convene in that city next year. I think that invitation is worthy of our most profound consideration. In my opinion the logical meeting place of our organization should be Birmingham. Selecting that progressive city of the fast developing southland would be the means of attracting a larger membership and getting in vital touch with a new set of men in the trade.”

Will P. Blair, ex-president N. B. M. A.—“The city of Cleveland by all means. That's the place of all places. It is a great city and centrally located. It is years since we have had a convention there. The railway facilities are excellent and such that most of our members would be in a position to easily attend the meeting. Still in a contingency, I would favor the city which will be selected for the clay show of 1914, if there is to be one.”

D. L. Wadsworth, Ohio Ceramic Engineering Co.—“I am for rotating meeting places. I think the association ought to get in touch with a different crowd of fellows every year. I believe that would be good policy to pursue.”

Theo. A. Randall, secretary, N. B. M. A.—“As far as I am personally concerned, I am for holding the convention in New Orleans. Yet on the other hand, I realize that we should not get away from our center of membership. With that thought in mind I am prone to favor some central west city.”

It was rather late when the N. B. M. A. session was called to order in the large convention hall at the Congress Friday morning, as members were scattered about the hotel looking over the machinery exhibits, and others attending committee meetings of affiliated associations.

However, within a few moments after President Rogers rapped for order, the delegates began to flock into the hall, and it was not long until nearly 300 chairs were occupied. The session was a highly interesting and in-



East End of the Main Aisle Showing General View of Chicago Face Brick Assn. Ex.



structive one, and it was admitted by many to have been one of the most salient of the whole convention.

The full stenographic report of the transactions of the entire three days' sessions follows:

WEDNESDAY, 10 A. M., MARCH 5, 1913.

The convention was called to order by President C. A. Bloomfield.

PRESIDENT BLOOMFIELD: Gentlemen of the convention, I want to introduce to you the Rev. Father Dorney, of this city, who will open the convention with prayer, if the gentlemen will arise.

FATHER MAURICE A. DORNEY: In the name of the Father, and of the Son and of the Holy Ghost, Amen. A product of clay ourselves, and its great masterpiece, we ask the Creator of all clay to breath into us the spirit of wisdom that we may know how to fashion new things of value and comfort for the best of all clay, man.

Our Father who art in heaven, hallowed be Thy name. Thy Kingdom come, Thy will be done on earth as it is in heaven. Give us this day our daily bread, and forgive us our trespasses as we forgive them who trespass against us.

In the name of the Father, and of the Son, and of the Holy Ghost. Amen.

PRESIDENT BLOOMFIELD: Is the representative of his Honor, the Mayor here? If not, we will pass that and go on.

Ladies and gentlemen, owing to a circumstance over which I have had no control, I have not written out an address of welcome as is usual, but I want to go through a little history on this occasion of our convention and to explain some things.

Just one year ago today, fifty-two weeks ago, we met in this hall and against all precedent we are meeting here again today. Whether that is going to be for the eventual good of the association must be determined later.

Your executive committee took this into earnest consideration and some hesitated to break this precedent for two or three reasons; one of them is that, as you know, these occasions are the only outings that a great many of our members get, and they look to going to a different place every year, with a view of seeing the country. Another is that we like to equalize the expense in going to one center one year and another center another year, and in that way the expense is evened up; whereas, if we always meet in one city, those in the immediate neighborhood would be saved hotel and car fare expenses, which add up during the course of a week, and this at the ex-



Clay Modeling Class from the Art Institute, Demonstrating Clay Modeling from Life.



pense of the surrounding country. But, in obedience to wishes expressed last year, we are here today.

Reviews Association's History.

Twenty-six years ago a small body of earnest men met together for the purpose of co-operation in the clay industry; and, owing to two things, we have today the largest body, and the most successful body, of its kind, in the world.

Those two things which have led to the success are, in the first place, that our members are honest; they are earnest, they love their fellow brickmaker, and they come here determined to help him out of his troubles, knowing that if they have troubles of their own he is ever ready to extend a helping hand to them.

The second is that we have been given a secretary who has unselfishly devoted the best part of his life to making this association what it is today.

When we first started it was the custom to give the visited city the highest honor, the presidency; but we found that sometimes that was the only time that we saw him, the day that he presided.

As we grew older, as our body grew stronger, it became a great honor, and it was thought wise to elect only to that office men who by years of attendance, had shown their interest in the organization and were loyal and true to it, and it was also thought wise to prepare them for

the position by instituting three vice presidents, giving them an opportunity to prepare themselves to preside over this fine body of men.

I think it is necessary that these things should be explained, because as I look around me I see that the old faces that I met here first are very few, and young men, young fellows, are coming in, knowing nothing of the history of the society, and therefore, not being perhaps in sympathy with some of these things which have become necessary in our regime.

Gentlemen, I do not want to give you a political talk, and yet if ever there was a time in the history of this country when manufacturers and merchants should get together to co-operate for self-protection, now is that time. There has been a change in the administration. We have seen the results in this country of radical tariff changes, and I think each one of you gentlemen should make himself a committee of one, so far as lieth within you, to see that this question of tariff becomes non-partisan. It should be taken absolutely out of politics, so that no radical changes should be made, but they should take place gradually, as experience shows that they are necessary.

Urges Fire Brick Men to Organize.

When this organization started twenty-six years ago it represented simply the ordinary brick manufacturer.



Artistic Lamps, Vases and Art Tiles Displayed by the Fulper Pottery Co., Flemington, N. J.



The other gentlemen found that they, in their lines of business, were deriving benefit, and they have joined us, so that as a result to-day we are very much like the national government with the states, many in one, each one filling a special place, like the Face Brick Association, the American Ceramic Society, the Building Brick and Paving Brick Associations, and now the time has come when we want another state, another body, and that is an association of refractories, manufacturers of refractories. I trust before this convention is over that those gentlemen here who are interested in the manufacture of fire clay goods will get together and become a child of this association.

With these few words, spoken at random, and with

thanks to you all for the loyalty with which you have supported me, and the great honor which you gave me last year, which was one of the ambitions of my life, and the trust that after the election you will render, as I know you will, the same hearty support to my successor, I am going to thank you, gentlemen. (Applause.)

SECRETARY THEO. A. RANDALL: The next thing in order, according to our program, will be the report of Treasurer Sibley.

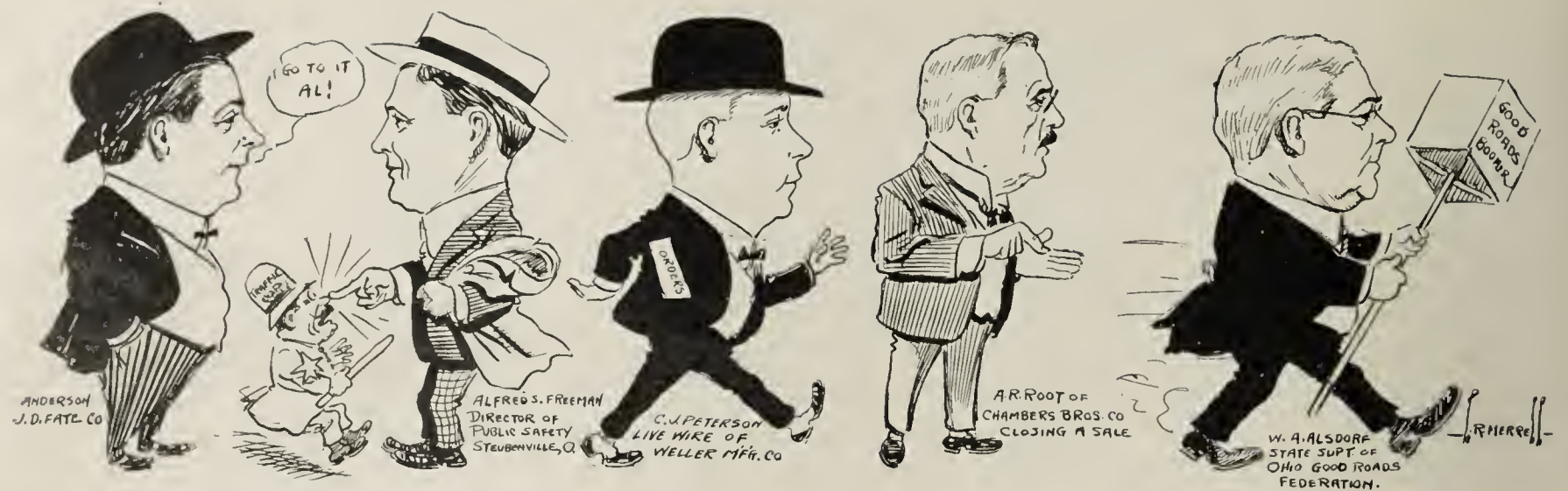
TREASURER'S REPORT.

To the Officers and Members of the National Brick Manufacturers' Association:

For the third time in the city of Chicago it is my pleasure to submit a statement of receipts and disbursements and report to you an increase in our surplus.



Elaborate Display of "Rustique Oriental Brick" Made by the Martinsville (Ind.) Brick Co. The Entire Display Was a Harmony in Soft Browns and Creams.



It was in this city twenty years ago that I made my first report as Treasurer and perpetrated a joke with our surplus, which caused Brother Ittner to force upon me the character of Official Humorist to the Association. Having to pull off this stunt three times in so short a period in the same city produces in me feelings very similar to those of the man who was being operated on for appendicitis by three doctors. After the operation was completed one of the doctors missed a small sponge. The patient was reopened and the sponge found within, and the man sewed up again. Immediately the second doctor missed a needle. Again the patient was opened and closed. Then the third doctor missed a pair of scissors. "Gentlemen," said the victim as they were about to open him up the third time, "for heaven's sake, if you're going to keep this up, put buttons on me."

It is a source of gratification, however, to report that in addition to setting aside \$250.00 to the Special Fund for Technical Investigation, we are able to add to our surplus account the sum of \$75.78.

Receipts and Disbursement Account of the Twenty-sixth Annual Convention of the National Brick Manufacturers' Association.

Receipts.	
Balance in treasury, account 1911.....	\$ 407.03
Membership fees, 535 at \$3, account 1912.....	\$1,605.00
Membership fees, 90 at \$5, account 1912.....	450.00
Reports and pamphlets sold, account 1912.....	55.00
Total receipts	\$2,110.00
Disbursements.	
Paid for—	
Programs, mailing, etc., per voucher.....	\$ 174.80
Convention report, mailing, etc., per voucher..	346.45
Pamphlet, "Back to Brick," mailing, per voucher	103.75
Pocket list members, per voucher.....	57.20
Miscellaneous printing, per voucher.....	194.82
Engrossing membership certificates per voucher	8.70
Postage, expressage, exchange, etc.....	102.04
Clerk hire, per voucher.....	300.00
Assistant secretary, per voucher.....	200.00
Secretary's traveling expenses, per voucher....	250.00

Number buttons, per voucher.....	26.46
Lantern, per voucher.....	20.00
Investigation Fund	250.00
Total expenses	\$2,034.22
Balance in treasury.....	482.81
Recapitulation.	
Balance, account 1911.....	\$ 407.03
Total receipts, 1912.....	\$2,110.00
Total expenses, 1912.....	2,034.22
Balance, 1912	\$ 75.78
Investigation Fund.	
Old balance, account 1911.....	\$ 250.00
Current appropriation, account 1912.....	250.00
Total fund	\$ 500.00
Respectfully submitted,	
JNO. W. SIBLEY, Treasurer.	

PRESIDENT BLOOMFIELD: Gentlemen, you have heard the report of the treasurer; what is your pleasure?

WILLIAM CONWAY: I move that it be spread on the minutes.

(The motion was duly seconded and carried.)

PRESIDENT BLOOMFIELD: The next in order is the election and installation of officers and members of standing committees. The first nomination will be for president. Mr. Kane.

A MEMBER: Mr. Chairman, sometimes when I begin to speak people think that I don't know what I am talking about, and they cannot find out. I suggest that you look at the head of your roster, and then you will know.

About six years ago I came into this association as a

(Continued on page 350.)



Artistic Display of Face Brick Shown by the Western Brick Co., Danville, Ill.



Booth of the Brown Instrument Co., Philadelphia, Pa., Showing a Miniature Kiln With Pyrometer Attachment.

FISKE QUILTS AS SECRETARY OF THE B. B. A.

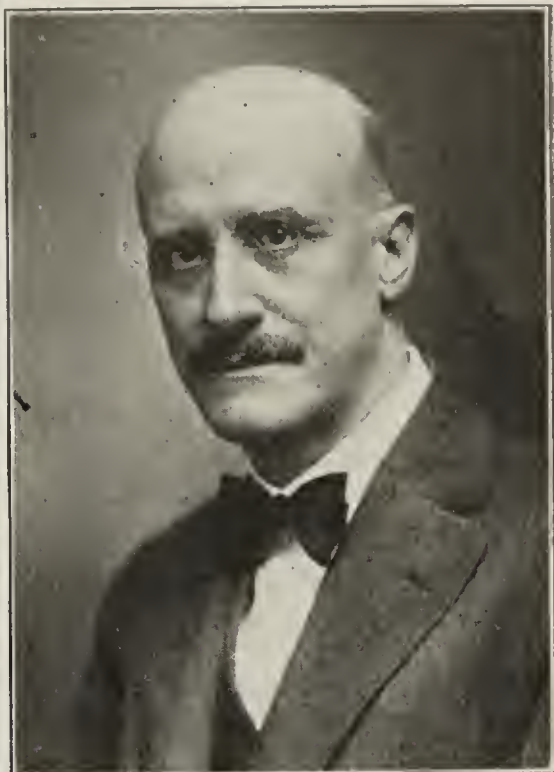
Resigns Post in Favor of H. Jerome Lee, as Effort to Organize Association Along Broader Lines Fails—Casson's Address Stirs Membership



Retiring Sec. J. Parker B. Fiske.



R. L. Queisser, a Cleveland Face Brick Man.



H. L. Matz, Vice-Pres. of B. B. A.

The Publicity Session of the Building Brick Association of America, which was held Wednesday of Convention week, was one of the most profitable in the history of the organization. "Brick and Clay Record" is pleased to be able to furnish its readers with a full stenographic report of this meeting, including the speeches and papers by Mr. Joslyn and Mr. Casson. The latter's address was particularly interesting and did as much as any one thing ever has to awaken the sleeping brickmaker.



WITH the retirement of J. Parker Fiske as secretary-treasurer of the Building Brick Association of America and the lack of interest shown among the members in the annual meeting of the organization convention week, it is believed that the association will have an exceedingly hard road to hoe in 1913.

There was some attempt made at the Friday morning session, held in the Green Room at the Congress Hotel, to reorganize the Association along broader lines, taking in the common brick manufacturers, but this met with opposition from the members who belong to the American Face Brick Association.

The organization was hampered considerably last year by a lack of funds but, with the decision reached at the closing session to reduce the membership fee to \$25 as the minimum, it is believed that a larger membership will be obtained and the funds materially increased.

William Hanley of the Bradford Pressed Brick Co., Bradford, Pa., was elected as the new president and H. Jerome Lee of the J. Parker Fiske Co., New York City, will be the new secretary-treasurer. Mr. Lee has been Mr. Fiske's secretary for a number of years and is thoroughly in touch with the affairs of the organization. The entire list of officers follows:

President, William Hanley, president of the Bradford Pressed Brick Co., Bradford, Pa.

Vice-President, Herman L. Matz, of the S. S. Kimbell Brick Co., Chicago, Ill.

Secretary-Treasurer, H. Jerome Lee, with J. Parker Fiske Co., New York.

The Board of Directors consists of the officers and include J. Parker Fiske.

W. E. Dunwody, president of the Standard Brick Co., Macon, Ga.;

Ralph Simpkins, vice-president of the Hydraulic Press Brick Co., St. Louis, Mo.;

J. M. Adams, secretary and general manager of the Iron Clay Brick Co., Columbus, O.

Time and place of the association meeting for 1914 has not been selected, although it was said by some members that the session next year would not be held in connection with the sessions of the N. B. M. A.

Ex-Secretary Fiske made an offer to buy all the assets of the association, following the discussion as to what the association should do during the coming year. The offer of Mr. Fiske was not accepted, his remarks proving to be a sort of a tonic to the other members.

The association, since the last annual meeting, has been incorporated under the laws of New York. A resolution was adopted at the meeting this year in Chicago to turn over all the assets of the Building Brick Association to the Building Brick Association of America. Quite a lot of discussion took place as to the policy the association should pursue during the coming year.

Charles E. Foster, of the Bradford Pressed Brick Co., Bradford, Pa., said: "If the American Face Brick Association of America is to be the Moses that is to lead the brick manufacturers out of a dense wilderness, then for Heaven's sake, let us put all our soul and energy into the movement. We have too many associations and are

THIS MAN PUT NEW LIFE INTO THE B. B. A. MEMBERSHIP



HERBERT N. CASSON



W. S. Dickey, Dickey Clay Mfg. Co.,
Kansas City, Mo.



J. S. McCannel, Milton, Ont.



Hon. Anthony M. Ittner, St. Louis, Mo.

'up in the air.' I believe that the common brick manufacturer should be a part of our organization, for the product of that plant is used in backing up the work of the face brick manufacturer." This statement of Mr. Foster created quite a little discussion between he and ex-president J. M. Adams of the American Face Brick Association. Mr. Adams was very much opposed to the thought brought out by Mr. Foster in having the common brick manufacturer become members of the American Face Brick Association, although it was said that a number of common brick manufacturers were selling some brick which they classed as a face brick.

Mr. Adams made the point clear that he, for one, was heartily in favor of creating a fund of \$20,000, \$30,000 or even \$50,000 for the publicity of face brick, for which statement the speaker was heartily applauded. One member of the B. B. A. declared that while he was a common brick manufacturer his sympathies were with the B. B. A. and also with the A. F. B. A. He made the point plain that he was heartily in sympathy with any movement to further the sale of brick, both common brick or face brick. This member said that his own firm sold common brick, advertised common brick for all, but if a customer wanted another brick he was there to sell it, no matter who made it, and that he had samples of brick from other factories in his office to show these customers. He declared he was not a jealous man and if Smith made a high class face brick, he was doing the trade a favor by boosting Smith's product. If the customer wanted common brick he was there to sell his own product. All in all the speaker said that he was anxious to boost the sale of anybody's brick.

The association passed a resolution to reduce the dues for the current term to \$25.00 a year.

A full stenographic report of the entire convention proceedings follows:

Convention Proceedings in Full.

PRESIDENT SIMPKINS: Ladies and gentlemen: We are disappointed in that Arthur W. Joslyn can not be with us this afternoon. He has sent his paper, "The Cost of a Brick House vs. One of Stucco," and it will be read by Secretary Fiske. We thought best to reverse the order of the program and have this paper first.

I take pleasure in introducing to you Mr. Fiske. (Applause.)

MR. FISKE: Mr. President, ladies and gentlemen: As a preface to this paper I would like to remind the association of the fact that two years ago a book was published entitled "The Cost of a House." This book contained statistics showing the difference in the cost of construction between a brick house, a frame house, a stucco house, and several other styles of construction. About 75,000 copies of that book have been published and distributed over the country. The only objection which has ever been raised to the figures contained in that book was that the house was never actually constructed of brick. The paper which will now be presented is a supplement to the book I refer to, and is based on the actual cost of construction of a series of houses which have actually been built of brick by Mr. Joslyn. Mr. Joslyn was one of the six contractors who assisted us in collecting figures for the previous book, and he now has completed the work by actually building some houses and verifying in a remarkably close degree his former estimates.

(Mr. Fiske then read the following paper:)

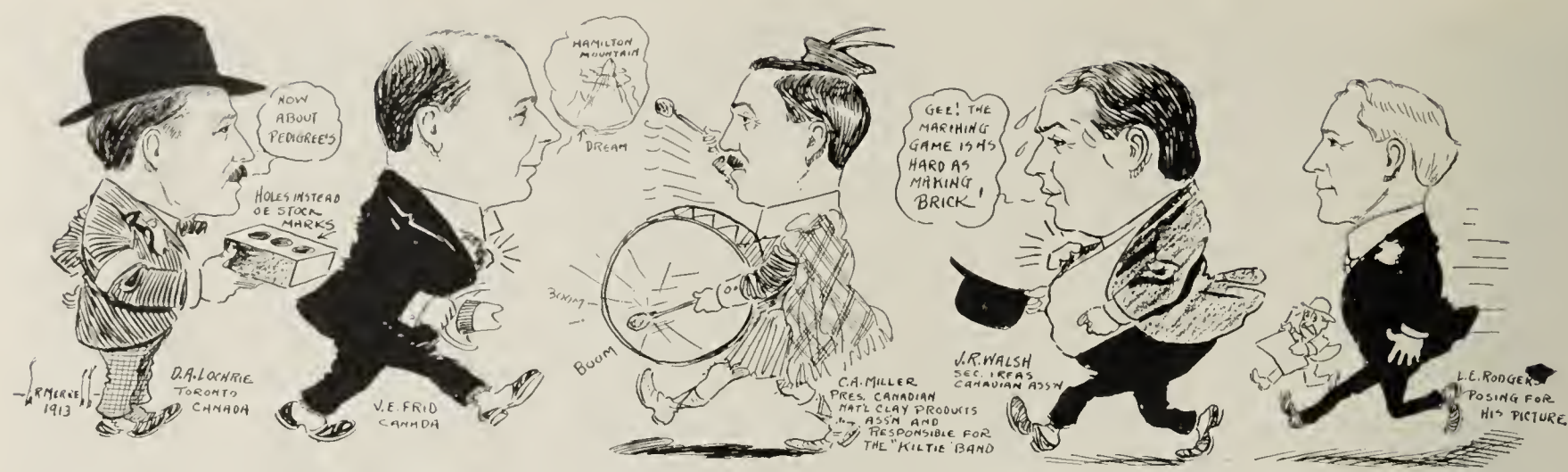
Something over a year ago a number of prominent, wealthy and public spirited men and women of Greater Boston formed an association under the name of The Boston Dwelling House Co. Their object was to study the "better housing problem" for such people as mechanics, clerks, etc., to find a suitable piece of land and to start the development of this land by the building of model apartments, semi-detached, and detached houses.

The piece of land chosen for this experiment is located in the Forest Hills district of the City of Boston and about four minutes by trolley from the Forest Hills terminal of the Boston Elevated and the railroad station. It borders on Hyde Park avenue for 500 or 600 feet and runs back from same, at the deepest point, about 1,000 feet.

This piece of land contains about 30 acres, is of a somewhat irregular contour and has a general slope to the south and west. On account of the transit facilities afforded by the railroad and the Boston Elevated at Forest Hills this tract of land is only about fifteen to twenty minutes from the business center of the city, notwithstanding the distance, which is about five miles.

As the trolleys run on Hyde Park avenue it was deemed advisable to build apartment houses on this frontage, and six blocks, each three stories high and containing twelve apartments, have already been built.

Back of these blocks new roads have been built, not in checker board fashion as usual in such developments, but in sweeping curves, taking advantage of the irregularity of the land both in plan and profile, and with a view to saving as many as possible of the numerous elm, oak, maple, pine and cedar trees with which the plot is well covered. In locating the houses on these roads a system of grouping has been followed that permits of



every house having a good exposure and plenty of open territory around it.

Illustrates Paper with Lantern Views.

MR. FISKE: We will now have the lights turned out and we will throw on the screen a few pictures showing this general arrangement.

Here is the first picture. (See Picture No. 1 on page 332 of this issue.) This is the highway on which the trolley cars run. These are the apartment houses along the highway, and over here is the part in which the brick houses have been constructed. Particular attention is called to the open spaces here for playgrounds and several points in the plot. (Mr. Fiske resumed the reading of the paper.)

The writer having been interested in the building of twenty-four units of detached and semi-detached houses, of which pictures are shown, gives herewith interesting facts in regard to them.

The twenty-four houses referred to were arranged in two groups of twelve units or houses each. Each group consists of two single and two double houses and a block of six houses.

MR. FISKE: These two groups are here; (Mr. Fiske at this point showed the views which are numbered 2 and 3 on page 332 of this journal); this is the first group, that is the second group, each group having a little park. As you come up the main walk and enter the group, you first pass by a single house, with its mate on the other side; then you have a pair of double houses, one there and one here, and here you have the six family house. These figures that will be presented therefore apply not only to a single house, but they apply also to a double house and to a six family house.

Parenthetically I will say that on returning from the convention at Chicago last year I learned of this enterprise, and I found very much to my disgust that it was the intention of the Boston Dwelling House Company to build this entire proposition of stucco. I immediately protested. I got hold of Mr. Joslyn, who had assisted us in our figures two years ago, and together we went to the President of the Boston Dwelling House Co. and the architects, Alham & Hopkins, and showed them why they should consider brick. As a result, this portion of the enterprise shown here has been built of brick. (Applause.)

Mr. Joslyn says: "It is enough to say that between us we convinced them, and the writer was asked to back up his figures by building the two groups mentioned. The writer agreed to the proposition and the owners have since called these twenty-four houses the Joslyn Group."

(Continuing Mr. Fiske read:)

Now, some few details in regard to the materials which were used. The buildings have slate roofs, copper flashings, modern plumbing and hot air heating, combination gas and electric lighting, hardwood floors, and everything else considered desirable in a dwelling of the better sort.

Built complete as above and with combination ranges, shades,

wall paper, lighting fixtures, screens, walks and grading, the average cost of a single unit has been \$3,700.

The writer's firm on this group of houses made a little profit, and so far as we are able to find out by careful calculation, the saving by building the houses of frame covered with stucco would have been only \$200 per unit.

If you will calculate from these figures you will find that that is practically six per cent saving. The corresponding figure which we presented in our book entitled "The Cost of a House" was four per cent saving, on a house which cost approximately double the cost of one of these units; the saving would be a little more in a small house than it would be in a big house.

It would seem, therefore, that the cost of lumber and the wages of carpenters had reached a point where the change from frame to brick in ordinary dwellings no longer makes so much difference in cost as to make the mention of brick scare an owner.

Carpenter is Converted to Use of Burned Clay.

MR. FISKE: Parenthetically, I would like to say that the man who writes this paper is primarily a carpenter—that is to say, he has come up into the contracting business through the carpenter branch of it, with all its natural prejudices against brick. These prejudices, however, have been entirely overcome, by contact with the real facts.

If the house is taken for a ten year period and repairs and painting considered it is cheaper to build in brick than in the other forms of construction now in use for such houses.

These houses also help to dispel the notion, possessed by many people, that a small brick house cannot be made to look attractive and homelike. As lumber becomes more scarce and expensive, and it is doing so daily, the people must build most of their houses out of materials of clay. Nothing is more enduring than a good brick and it is to be hoped that the experiment of these houses will lead to the building of more small brick houses, not only in Boston but elsewhere.

MR. FISKE: We now will proceed with the other pictures, and I will explain them as they are thrown on the screen.

The next picture, No. 2 (shown in illustration on page 332), is a general view of the two groups. This is one group here. A single house here, another single one here, a double one there, and a six family house over there, and this is a similar group here.

The next picture, No. 3 (in illustration on page 332), shows one of the groups a little better than the previous picture, a single house on each corner, a double house, a six family house.

The next picture, No. 4, shows one of the single houses, not pretentious at all, but an exceedingly attractive little house.

A MEMBER: About what would that cost, that house?

MR. FISKE: Three thousand seven hundred is the average cost per unit. The exact cost I will give you in a few moments. When I say exact cost I mean down to the last actual cent, which it cost Mr. Joslyn to build each house, or group of houses.

A MEMBER: Does that include plumbing fixtures?

MR. FISKE: Yes, I will give you the list in a few moments, exactly what is included. The next picture, No. 5, will show the double house again, a very attract-

FOREST HILL COMMUNITY HOUSES, BUILT OF BRICK



2



4



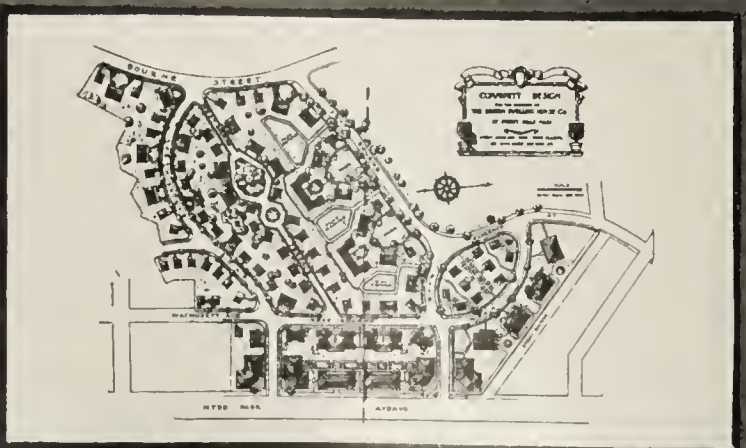
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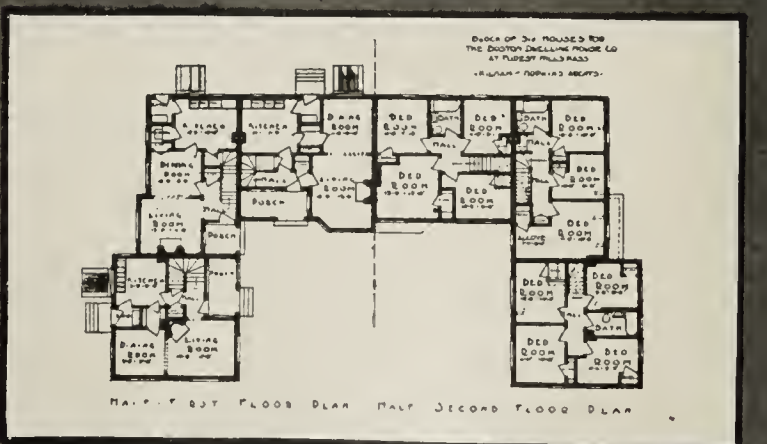
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6



1



7

The Above Pictures are Mentioned in the Paper of Arthur W. Joslyn Before the B. B. A. Publicity Meeting, Which Is Given in Full on Page 329. The Numbers Above are Referred to in the Address.



F. W. Eastman, Tacoma, Wash.



J. S. Ringle, of Wausau, Wis.



C. C. Murray, Reynoldsville, Pa.

ness with which this work has been done and the accuracy with which these figures have been obtained.

(Reference is made to the table reproduced herewith.)

I believe that this is probably the most accurate tabulation of cost which has ever been kept on a small house. For instance, this tabulation is divided into three main columns. The first main column is for the four single houses, the second is for the four double houses, and the third column is for the six family houses. The cost of all the different items has been kept. Mr. Joslyn put an accurate timekeeper onto this job and he kept the time of every workman employed, exactly what he was working on.

The table contains these items: "Excavation, Stone Foundation, Concrete Foundation, Drains, Grading, Common Brick, Face Brick, Framing, Square Boarding, Matched Boarding, Studding, Setting Iron, Outside Finish, etc., etc.," right down to the last cent. Each item has been given not only for the single house, but for the double house and for the six family houses, and then the cost per house has been calculated. Still further, the cost per unit has been calculated; by that I mean the cost of concrete foundation per cubic yard, the cost of laying brick per thousand, the cost of the frame per thousand feet, and so on. These figures will be published along with the other data given in this paper.

Houses Show Unusual Generosity of Builder.

Now, the final conclusion is this: The four single houses averaged \$3,666.06 each. That is the exact cost to Mr. Joslyn. The cost per unit in the case of the double house, that is, one-half the cost of the whole house, was \$3,146.90, and the cost per unit of the six family group was \$3,478.11, showing that the double house happened to be the more economical house per unit, than in the case of either the single or the six family type.

I am exceedingly glad to be able to present this paper. It is an illustration of a rather unusual attitude on the part of a contractor. You very seldom find a contractor that will keep this information for the benefit of anyone except himself, but here is a man who has gone to a great deal of pains and expense, and sends us these figures with a letter telling me that I am at liberty to use them in any way that I see fit. He certainly is worthy of all praise.

I believe this is the last answer to the doubting Thomas

who says that he cannot afford a brick house because it will cost fifty per cent more than one of stucco. (Applause.)

PRESIDENT SIMPKINS: The secretary of the National Paving Brick Manufacturers' Association on seeing these pictures just before the meeting remarked that the only thing that Mr. Joslyn and Mr. Fiske had left undone was, there was a dirt road in front of the house instead of brick pavement. I am inclined to agree with that.

Our next paper will be on "The Advancement of Brick Architecture," by a man who has been president of the Illinois Chapter of Architects, one who is a Fellow of the American Institute of Architects, a man who has stood for the best that there is in brick architecture, which, after all, is the real feature of permanent publicity in brick work. I take pleasure in introducing Mr. Arthur F. Woltersdorf of Chicago. (Applause.)

(The following paper was then read:)

Mr. President, I haven't a lot of statistics, which of course are always valuable, such as Mr. Fiske gave you, so my talk can only be general, based on a few thoughts and some experience.

My excuse for appearing before you today is founded in a desire for a better and more appropriate use of materials in building; that is, better building, better housing, improved architecture, all of which means advanced civilization and artistic perception.

Your committee asks me to tell you from the standpoint of the architect how the sales of brick can be increased—why the public uses no more brick than it does, and finally, to use their own words, "Why does the brick manufacturer and dealer not have a higher standing with the architect and his client and with the public in general?" "What is the matter with us," they ask.

My friends, as far as I know there is nothing especially the matter with the brickmen. The trouble is with the architect and his client—or the owner where he happens to dispense with the architect, which sometimes happens. It is with the architect and his client I will quarrel, and if in my analysis of their shortcomings you see your opportunity of inserting a wedge to increase the demand for your product I shall not have taken up your time in vain.

The buildings where face brick may appropriately be used may be divided into a number of classes. Let us take first the dwelling house, the small house that Mr. Fiske drew your attention to a moment ago. I think no one will deny that the brick people have done wonders in advancing the cause of more permanent homes, better homes for the man of small income. These illustrations of the various homes just outside Boston, I think, are a splendid and graphic illustration of what advancements exist, and I think the manufacturer or the brickman is entitled to have very great credit in the advancing of this cause.

Tells of Another Community Group of Brick Homes.

Besides this particular example mentioned here, there comes



Display of the National Brick Mfrs.' Assn.



Section of Silo Shown by the Davenport (Ia.) Brick & Tile Co.

to mind a community that has recently been established just outside of New York. I refer to the Forest Hills Gardens of the Russell Sage Foundation in Greater New York. It is about twenty minutes' ride from the Pennsylvania station out onto Long Island. Mr. Fiske, perhaps, and some others may be surprised that I mention this, because concrete has been used to some extent there, but it is a concrete that is composed not only of cement and crushed stone, but has an ingredient of crushed brick, and it was this element which has interested me deeply, so I went out there to see it.

One criticism that many of us have made of concrete designing is that it is cold, that it has an uninteresting gray color, very often an unreliable color, drying out in all colors of the rainbow, unexpectedly, but very often, and it is that that many of us have tried to overcome. I think Grosvenor Atterbury, the architect of Forest Hills Gardens, has accomplished a good deal in making his concrete with brick. I understand it is not all, because some of it is plastered on. There is, however, a good deal of very interesting brick work in that suburb. Mr. Atterbury did not design everything there. Other architects have done work, though everything done in that particular place was under the supervision of this man, Mr. Atterbury.

The Russell Sage Foundation, as I understand it, started out with the idea of building—they had a philanthropic idea. They wanted to build a house at small cost for the wage earner. This to a large extent has been defeated, because in their ambition to produce something fine, the cost has grown proportionately, and the lowest cost house in this town, as I understand it, is \$7,890, and then from \$10,000 up. You see that means that it drifts up into the class of men who have a better income than the people probably that would rent these attractive little houses that have just been shown. But outside of these community efforts, I think there is a great advance in the individual effort, in the effort for individual houses, and while I believe in many cases better architectural talent is not brought forward in these houses, for that reason the architect is not to be given so very much credit in that field, it is the brick man that deserves the most credit there.

Then we come to the cheap detached houses in cities, where chaos seems to be the architect, and the edifice is a Babel. I am thinking now of some of our own streets here in Chicago and in other cities where men have erected houses costing say from ten to twenty or twenty-five thousand dollars, and notwithstanding his ambition, the owner has allowed the contractor to put on let us say a stone front, for example, and to carry that around perhaps a little more than the thickness of the front wall, perhaps two or three feet, ten or fifteen feet each side. If he is particularly ambitious—or, I ought really to speak in the past tense, because we are getting away from this sort of thing—if he was particularly ambitious he would say take a face brick of reasonable quality, say eighteen to twenty dollar face brick, and the man and his architect would think that they had accomplished something fine. As a matter of fact, that, I think, is about as criminal a proceeding as architects and owners can resort to. (Applause.) It is extremely bad taste. If a man wants a stone house, he ought to be willing to spend sufficient money to carry that material around far enough so that there is some unity, some harmony in the whole composition. If he has not the money, let him take brick. I see no reason why a house of that sort is not a better house, using well-burned brick, which we all know will stand the elements longer than the majority of natural stone—I think it is far better judgment for him to have his house designed as a whole, using the same material all around. If he cannot afford to use good face brick, let him use cheap face brick, but have

it properly laid up. There are enough men of ability nowadays that can design it, and there are plenty of builders that can carry it out.

Urges More Artistic Factory Structures.

I come now to the question of warehouses and factories in cities. The time was, and not very long ago, when a manufacturer thought, "Well, it is only a factory, it does not make any difference how it looks." The insurance question, of course, always entered into it. It was built of masonry, usually brick, the cheapest brick possible. There may have been a time when frame and galvanized or corrugated iron was used, but I cannot speak of that, having had no experience in it; but nowadays any successful business requiring a factory or warehouse structure has, it seems to me, at least in a community as advanced as we here in the middle west, been getting away from that thought, that anything is good enough for a factory.

We have enough interest in our fellow men, I think, and the officers and owners of the factories are trying to make them sufficiently attractive so that there is something appealing in those structures to the workmen coming and going to and from their work.

I think there are very few owners today requiring structures of that sort who are willing to have their architects give no thought at all to the appearance of the structure. That is bad judgment. It is frequently considered a good advertisement to present a good front to the street, but we have not advanced generally, I think, sufficiently far to see that by sticking on a front and leaving poor side walls and rear to a building, that will stand for who knows how long, exposed on all sides. It is very bad judgment, to say the least. I know a great many of our companies build that way today all over the country, here, there and everywhere, but there are those among us who fight that sort of thing. It seems to me it is not a very difficult thing to convince your owner that he is very short sighted in simply sticking on a few proper face brick on the front. You will find a good many examples right here in the city where the facade, the treatment of the exterior on the street, has been carried all around, and that, in my judgment, is the proper way to handle that problem.

I do not mean now that an architect should be extravagant, should spread himself in the use of elaborate terra cotta trimmings and a lot of detail, not at all. That is not the way architecture is produced. Architecture primarily is the study of the possible relationship of voids to solids, the proportion.

Asks Builders to Choose Architects Carefully.

Now, gentlemen, if you want to do something for the advancement of good building throughout the country, try to prevail upon your owner to give his building into the hands of someone who has some sense of beauty, some sense of propriety, some consideration for his surroundings. The concrete engineer who has a patented system which he is trying to foist upon the owner never does that. He is the man that is responsible for these eye-sores that offend everyone passing along on trains and through town. These concerns I speak of give no thought to surface, to color, to proportion, to anything but the strength of the floor and the housing. As a matter of fact, their buildings very often cost more than the house of brick. I know that from experience.

Coming now to the tall city building with its unconsidered side and rear walls towering above its neighbor, some impressions of Pierre Loti, French author and naval officer lately visiting New York, are of interest. He says:

"Oh, the skyscraper! It will take a long time for my eyes

(Continued on Page 368.)

ADAMS URGES LOCAL PUBLICITY CAMPAIGN

Retiring President of New Association Outlines Advertising Policy for Members in His Annual Address

The first meeting of the American Face Brick Association, which was organized at the brick convention in this city last year, convened in the green room of the Congress Hotel Thursday morning, President J. M. Adams, of Columbus, O., being in the chair.

This association is the "baby" organization in the brick trade, so far as age is concerned, but it has done a wonderful work during the first years of its existence.

Following the reading of the minutes of the last annual meeting, President Adams read his annual report, in which he declared the association, while not paying out any money for salaries, accomplished a number of good things for the benefit of the face brick manufacturers.

Edward E. Gore, a member of the firm of Barrow, Wade, Guthrie & Co., certified public accountants of Chicago, delivered an interesting talk on "The Necessity for and Value of Cost Accounting as an Aid to Successful Manufacturing."

"Distributing Agencies and Districting the Same" was the theme of a salient address made by John H. Black, general manager of the Jewettsville Brick Co., of Buffalo, N. Y.

"Some of the Shortcomings of the Face Brick Manufacturer from the Dealer's Standpoint," was the subject of an interesting address by L. D. Binyon, president of the S. S. Kimbell Brick Co., of Chicago.

All of the addresses were interesting and the speakers were warmly applauded.

The program of the afternoon meeting follows:

"The Value of Organization to the Brick Manufacturer," by Will P. Blair, Secretary National Paving Brick Association, Cleveland, O.

"The Value of a Freight Traffic Bureau to the Brick Manufacturer," by E. C. Clark, Kittanning Brick & Fire Clay Co., Pittsburgh, Pa.

"Reciprocal Fire Insurance," by Walter T. Campbell, Manager Reciprocal Insurance Bureau, St. Louis, Mo.

The report of the secretary-treasurer and the committees was on the afternoon program. Admission of new members and the election of directors and officers, with their installation, was also scheduled.

Adams Refuses Second Term.

J. M. Adams, first president of the American Face Brick Association, because of ill health refused to accept a re-election at the Thursday afternoon session and in his place L. G. Kilbourne, of Columbus, O., was placed at the head of this growing and active organization. E. C. Clark, of the Martin Brick Co., Pittsburgh, Pa., was re-elected first vice-president. While the convention was making every effort to have Mr. Adams retain the position of president, Mr. Clark arose and said that he would do the work of the president's office, relieving Mr. Adams of all of it if the first president of the association would only consent to be re-elected. The name of Mr. Clark was proposed for president but because of most excellent business reasons he could not accept the honor. He was therefore retained in his former position.

It was made plain to Mr. Adams that he could not be allowed to retire from the councils of the association and in order that he might be continued in some capacity, he was elected second vice-president. It was one of the most solemn moments in the history of this association when Mr. Adams rose to reply to members who had spoken previously about his work in behalf of the face

brick manufacture. The silence that prevailed in the Green Room at that time was most marked. Mr. Adams stood erect. He looked the members square in the face and for a few moments could not speak. It might be said that the scene was one of deep solemnity.

That the whole soul and effort of Mr. Adams was wrapped up in the work of the association no one dare deny. During the past year Mr. Adams filled the position of president-secretary and his work stands out as a monument. He asks no financial gain, neither did he receive any from a personal standpoint, yet the members of the association are a unit in the expression that Adams is the man who started the face brick manufacturers on the road to a higher plane.

Board Plans Big Campaign.

C. Paul McFadden of the Toronto Fire Clay Co., Toronto, O., and a resident of Steubenville, O., was elected secretary-treasurer. Mr. McFadden is one of the young men of the face brick trade and while he will not retain the office permanently, he made the statement that he would put forward his best efforts for the benefit of the association while he retained that office.

The old board of directors were re-elected unanimously.

Following the installation of the new officers the convention adjourned to meet at the call of the chair. A meeting of the board of directors, however, was held Friday morning in the Congress Hotel at 11 o'clock.

This association planned a wonderful amount of work for the coming year. With this end in view a secretary is to be procured whose salary has been placed at \$3,600 per annum. Permanent offices are to be opened and a campaign of education will be carried on upon a very extensive scale. Another office has also been determined upon by this association, which will be known as that of traffic manager.

It is absolutely certain, according to the best information obtainable, that the American Face Brick Association will not meet in convention with the other brick associations next year. During the Thursday session it was the consensus of opinion that because of the desire to be by themselves as a unit, it would be wise hereafter to hold the annual conventions in a city other than that in which other associations were convening.

The annual address of President Adams follows:

As your presiding officer it gives me great pleasure to welcome you to the first annual meeting of our Association. A year ago in this city a partial organization was effected. Some of you may think that little has been accomplished during the year. I beg to say that a great deal of necessary preliminary work has been done. The Board of Directors and the Executive Committee have each had one meeting. The members of the Board of Directors have given much thought to the problems which confront us as face brick manufacturers. The meetings were well attended, and a full day given by each to the discussion of what should first be undertaken by this Association and how the necessary funds to carry on the work should be raised.

While a great deal of work has been done, but very little of the Association's money has been expended, as you will see by the report of our Secretary-Treasurer. The only money expended has been for stationery, postage and stenographic work. We have had no salaried officers.

It has been a year of preliminary work. We have been getting our bearings and measuring our capabilities. That there is much to be accomplished no one questions.

In the papers which are to follow in today's program

will be discussed some of the things which this organization ought to take up.

It is the opinion of the Board of Directors that this Association should open an office in some central city and place in charge an intelligent, progressive, wide-awake secretary whose duty it would be to carry out the policies adopted by this convention. The Secretary should devote his whole time and attention to this work and should have no connection whatever with any factory or selling agency.

This office should comprise a Bureau of Information for face brick manufacturers; a Department of Publicity; a Freight Traffic Bureau; in short, this office should be supplied with the men and with the money necessary to do anything and everything which this Association shall determine expedient. It will be for you to determine at this convention, for yourselves, what these things shall be.

The value of a Freight Traffic Bureau to the brick manufacturer will be set forth in a paper which will be read today. That such a bureau should be established there can be no question.

Urges Effective Cost System.

The working out and installing of an effective cost system for face brick manufacturers is a question of the very greatest importance and until every manufacturer is taught how to correctly figure costs, the present ruinous competition will continue. The best plan to raise the price of our product is to teach every manufacturer how to determine the cost of his product. There are very few manufacturers who deliberately sell their product for less than cost. Many are doing so today, but it is because they do not actually know the real cost.

Not long ago a face brick manufacturer asked me if in estimating the cost of our brick I figured in interest or borrowed money, fire and liability insurance, machine repairs at the factory, etc. I was very much surprised that anyone should ask such a question, and it was very evident to me that this manufacturer did not include these items in estimating the cost of his brick. Furthermore, he never dreamed of charging off anything for depreciation of plant.

We should take up the question of the training of bricklayers. In many places the bricklayers' union has so restricted the number of apprentices that there is not a sufficient number of bricklayers to do the work in the large centers, and practically none whatever to be found in the smaller towns.

In our region, at least, we frequently find persons who are going to build, objecting to the use of brick solely because they cannot secure a bricklayer in their town to do their work, and consequently they build frame buildings.

This Association could well afford to appropriate a liberal amount of money to be given to the various Industrial Schools, now conducting departments for the training of bricklayers.

Every year the price of bricklaying goes up. In the city of Columbus, bricklayers are asking 70c an hour, while if they were to go out to surrounding towns, they would want pay for going and coming and railroad fare, and they will not go at all, unless they cannot get work in the larger places.

Suggests Co-Operative Publicity Work.

Publicity is a most important work. The expense of maintaining a separate office for the exploiting of the use of brick as a building material is too great. Many of us have been paying from \$50 to \$500 per year for advertising purposes, but when from 30 to 50 per cent of this money is expended for salaries, rent, etc., we are simply wasting our money.

I am in favor of all kinds of advertising, both in daily papers and magazines, but I believe, however, that 10 per cent of the amount of money raised for advertising ought to be sufficient to cover all of the expenses of the administration of the fund.

I would suggest this plan of newspaper advertising: Organize the face brick dealers and common brick manufacturers in the various cities, into organizations for the purpose of exploiting the use of brick, agreeing to furnish without expense to them in each one of these cities, copy of high class advertisements to be inserted in the daily papers, and also agreeing to pay 20 per cent of all such advertising.

In this way, the local dealers, going to the managers of the dailies, can secure better rates, and if not better

rates, a better location in the papers than could be secured if the advertising came from an outsider and it will help the local dealers to secure, without any cost whatever, the publication of very many semi-news articles bearing on the use of brick. I believe that \$10,000 expended in this way would secure at least \$75,000 worth of brick advertising.

Heretofore the largest amount ever expended in direct advertising has not exceeded \$6,000, out of \$12,000 or \$14,000 paid into the fund by the brick manufacturers and dealers for this purpose.

Cleveland, Ohio, already has an organization like that to which I refer and it has been running a series of advertisements in the leading daily papers.

It is an easy matter to convince the dealers and common brick manufacturers in any city that it pays to advertise the use of brick, and if they can be assured that the copy for the advertisements will be furnished free and that 20 per cent of their advertising bills will be paid, they will not hesitate to pay the other 80 per cent. One of the difficulties in local advertising is to secure the right kind of copy for advertisements. The dealers don't have time to write it and don't know where they can secure it. This plan is for your consideration.

Wants to Curtail Plant Promoter.

What are we doing to counteract the work of that salve-spreading, fortune-wrecking, truth-defying individual who is going up and down the country seeking "whom he may devour" I refer to the Brick Plant Promoter.

The farmer having heard rumors of the great value of clay and shale is at once interested. He does not know that the average clay or shale is so abundant as to be in reality as "cheap as dirt." The promoter promises enormous profits. He represents the cost of manufacturing a high class brick to be from four dollars to five dollars per thousand, and that they practically sell themselves at from \$12 to \$15 per thousand.

It is easily demonstrated that 30,000 brick a day can be made and sold at a profit of from \$8 to \$10 per thousand.

The farmer takes out his pencil and figures on his plow handle as follows: 30,000 brick a day at a profit of \$8 per thousand is \$240 per day; counting 300 working days to the year, he has the enormous net profit of \$72,000 on an investment of, say \$50,000.

The promoter, in order to be ultra conservative and entirely safe in his estimate, cuts the profit just in half, making the net profit \$36,000, or 72 per cent on the investment. Dazzling! Astounding! The farmer who has worked from daylight until dark all his life in order to make his farm pay 6 per cent on the investment, pinches himself to see if he is still in the flesh. Seventy-two per cent per annum and no work and no taxes! The farmer takes the hook. He, his friends, and neighbors raise the \$50,000 capital, which, by the way, is about one-third enough to build and equip a plant large enough to make 30,000 brick per day and furnish sufficient working capital to successfully conduct the business.

The plant is built, fully equipped with machinery—yes, machinery to burn, and manufacturing begins. The inevitable difficulties appear. They come singly, in squads, in regiments. The mortgage given to complete the plant, grows. Instead of the brick costing from \$4 to \$5 per thousand to make, they cost two or three times that amount, and instead of selling themselves easily at from \$12 to \$15, as they were expected to do, they don't bring cost. Payrolls become harder and harder to meet; creditors become more insistent. In order to raise money the brick are sacrificed for cash, in advance, to some kind-hearted jobber. The jobber throws them on the market at demoralizing prices and your business and mine is injured. Finally the inevitable end comes—bankruptcy. Every person connected with the transaction has been injured, except the promoter and the machinery manufacturer. Of course, I am not intimating that any machinery manufacturer would countenance any such nefarious methods, nor send out men who would do likewise.

You need never fear the competition of successful brick companies, because they insist upon knowing precisely what their brick cost and have too much horse sense to sell them below cost, and not only that, but they sell at a profit or not at all. That manufacturer who does not know what his product costs him is a chump. If he does

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DECKMAN AND BLAIR HEAD N. P. B. M. A.

Organization Honors Old Officers With Re-election—Board of Directors Appointed—Swedish Representative Addresses Convention



Chas. J. Deckman, Pres. N. P. B. M. A.



J. W. Robb, Clinton, Ind.,
V.-Pres. N. P. B. M. A.



W. P. Blair, Sec. N. P. B. M. A.

The N. P. B. M. A. started business promptly on schedule time at 9 a. m., Monday, March 3, in the Green room of the Congress Hotel. President Charles J. Deckman of Cleveland, O., was in the chair. This session, while a brief one, was devoted almost entirely to routine matters and it was not until Monday afternoon that the real work of the Convention started.

At the first session the Tuna Valley Co., of Bradford, Pa., which was represented by the popular brick manufacturer, W. M. Hodges, was admitted to full membership. Several other applications were received and referred to committee, a report upon which was made to the Convention later.

A proposition presented to the Convention to advertise paving brick in Chicago papers during the Convention was laid on the table.

The Monday afternoon session started shortly before 2 o'clock, when the annual reports of President Deckman, Secretary Blair and Assistant Secretary, H. H. MacDonald, were presented.

President Deckman and Secretary Blair, with practically the entire list of old officers were re-elected Tuesday, March 4, to guide the destinies of the National Paving Brick Manufacturers' Association another year. The election was unanimous and was a tribute to the efficiency of the officials.

"The Ocean-to-Ocean Highway," was discussed during the forenoon, a message of congratulation sent President Wilson and Vice-President Marshall, and an address by M. Conquist of Sweden, a representative of this government who is in the United States to study the methods of manufacture in the clay industry.

The officers elected were:

President—C. J. Deckman, of the Deckman-Duty Co., Cleveland, O.

Vice President—J. W. Robb, of the Clinton Paving Brick Co., Clinton, Ind.

Secretary—Will P. Blair.

Assistant Secretary—H. H. MacDonald, of Cleveland, O.



Those pictured above, beginning at the left, are President Deckman of the N. P. B. M. A.; W. M. Hodges, Charles M. Crook, C. P. Mayer and Secretary Will P. Blair, all good paving brick men.



W. H. Sachs, Elected Sec. Mchy. Mfrs. Assn.



Paul Beer, Barber Asphalt Co., Des Moines, Ia.



Thos. R. Preece, 1st V. P., Bricklayers and Masons' International Union of America.

Treasurer—C. C. Barr, of the Barr Clay Co., Streator, Ill.

Twenty-five members were elected to the Board of Directors as follows:

J. B. Wilcox, Alliance, O.
 Eb. Rodgers, Alton, Ill.
 R. A. Doan, Nelsonville, O.
 W. N. Alderman, Athens, O.
 C. C. Barr, Streator, Ill.
 C. C. Blair,
 J. B. Hammond, Bolivar, Pa.
 M. E. Gregory, Corning, N. Y.
 F. M. Brady, Cleveland, O.
 J. W. Robb, Clinton, Ind.
 D. Warren DeRosay, Corry, Pa.
 H. C. Adams, Danville, Ill.
 C. J. Deckman, Cleveland, O.
 C. P. Mayer, Bridgeville, Pa.
 J. G. Barbour, Canton, O.
 F. L. Manning, Portsmouth, O.
 O. N. Townsend, Zanesville, O.
 D. R. Potter, Clarksburg, W. Va.
 John M. Simpson, Dayton, O.
 R. L. Lewis, Gloucester, O.
 John W. Hall, Baltimore, Md.
 W. R. Barnhart, Jr., Wooster, O.
 W. P. Blair, Cleveland, O.
 L. A. Culver, Veederburg, Ind.
 G. O. French, Canton, O.

The Association in session voted unanimously Tuesday morning to wire President Wilson and Vice-President Marshall their heartiest congratulations and wishes for a felicitous term of office. The telegram which was sent read as follows:

"To The President and Vice-President of The United States:

"The National Paving Brick Manufacturers' Association, in annual convention assembled, by unanimous resolution extends to the President and Vice-President, now being inaugurated, its confidence and most sincere wish for your personal welfare and a wise and beneficial administration during your term of office.

"Signed:

"Will P. Blair,

"J. W. Robb,

"J. B. Hammond,

"Committee."

Will J. Dobyns, representing Carl Fisher, of Indianapolis, spoke on the Ocean-to-Ocean Highway, at a meeting of the Association Tuesday morning, and said that the difficulties surrounding this project would be hard to overcome, but through perseverance on the part of all

interested it would help it out. Continuing, Mr. Dobyns said:

"This national highway or ocean to ocean improvement is one of the largest improvements ever contemplated or started. Large manufacturers have contributed most liberally to the plan, not from a selfish standpoint but for one of cold business. We have heard a great deal of talk about the River and Harbor Bill, which is a good thing. I am in favor of it the same as you are. However, we have to make a start for a highway that will benefit 75,000,000 people and we want to make this start now when we can enjoy it ourselves.

"We want to use the best material possible for this highway improvement and if brick is the best, we want to use brick. I am sure that we will all favor this plan for it appears that brick is the only lasting material for road construction. West of the Mississippi River, all of the states are in favor of this ocean to ocean road and it is only a question of time when each of the states will contribute liberally to the construction of this road or trail."

While the nominating committee was arranging the list of the Board of Directors, President Deckman said that it was time that an old-fashioned Methodist "revival" and that he wanted to hear "testimony" from as many as possible.

He called upon past president Charles M. Crook, who said, that although he had planned to go back to the farm, he could not keep out of the brick business. He spoke of the formation of the association when a few brick manufacturers held a little meeting at Birmingham, Ala., many years ago.

Mr. Crist, a well-known engineer of Grand Rapids, Mich., spoke upon the ocean to ocean road plan and said that the association could count on his individual help.

The guest of honor at the morning meeting was Mr. Conquist of Sweden, who has been in the United States for a few months, studying municipal work. He said he had no idea the United States was such a large country and that the plan of building a road from ocean to ocean was a most remarkable one and at the same time an important undertaking. He is a boomer of brick and made this fact plain during his brief address.



L. G. Blackmer, Blackmer & Post
Pipe Co., St. Louis, Mo.



Jno. R. Walsh, of Toronto, Sec.-Treas.
Can. Clay Products Assn.



Geo. H. Tefft, Sec. International Clay
Product Bureau, Kansas City, Mo.

ADDRESS BY THE PRESIDENT, CHAS. J. DECKMAN.

The work of our Association, as defined by our Constitution and By-laws and as directed by your officers and office committee, has been so eminently satisfactory from the viewpoint of your president, during the past year, that I am at a loss to know why I should attempt to present a report in keeping with the precedent established last year. If, however, a single suggestion be offered that may advance the interests of our membership and the manufacturers of Paving Brick generally, then your time occupied in presenting the same will be amply repaid.

Secretary W. P. Blair and his corps of assistants have devoted their whole time to the advancement and betterment of the Association's interests. He has labored upon the lecture platform to encourage the broader, better and proper use of your product. He has counseled with engineers and the engineering associations and fraternity to obtain the best and most approved methods in construction, and he has, by his untiring devotion to the Association's work, given to us the best that is in him for our good, and for which you and I should be truly grateful.

H. H. Macdonald, Assistant Secretary, has been a decidedly busy man. His particular service in directing our advertising work and the preparation of printed matter for the Association, and its distribution, is most commendable. It may be said that this service is what we have paid them for, which is true, but the motto, "Folks who never do any more than they are paid for, never get paid for any more than they do," does not apply to these, your Secretaries.

The N. P. B. M. A., organized eight years ago for the promotion and proper use of vitrified brick for street and roadway improvements, has developed conditions among its membership and the manufacturers of paving brick that have resulted in a great good to the industry.

The wants of such an organization were but little known to its promoters, and its membership has had to develop measures and means to bring up to a substantial basis the methods best suited to insure the greatest success for the paving material as represented by the diversified interests of our membership, and its proper use as applicable to the Municipality and those using our product for public or private street or roadway improvements; and, while the accomplishments of the Association have been most creditable and we can point with pride and satisfaction to results obtained, our efforts have not met with that universal success that our material merits and to which the contributing public is entitled.

This has not been the fault of our membership in any very great measure, because, with but few exceptions, our members have been true and loyal to the measures and methods endorsed and advocated by the Association, and our only criticism is that all of us have not been as enthusiastic and energetic as the enterprise deserves all of the time. We have lacked in giving expression of gratification or disapproval of many things, that have been officially tolerated in the use of our product, because of fear or the courage of our convictions, because

of personal injury that may have come to us, and in these things, and these alone, we have not given to our Association the loyal support its efforts have deserved.

There are none of you but will coincide with me in my views when I say that too frequently we have failed to call the attention to the Engineering fraternity in charge of public work, for which we were furnishing material, of the toleration of vital and important methods of construction that we all knew were for the injury and discredit of the finished improvement and our material. And our sole reason was we did not want to incur the displeasure of the official in charge, because of his authority over that which we, as manufacturers, were supplying for the improvement in progress. This fault is our greatest weakness. I do not feel that, because an Engineer or an official, in charge of a piece of work, is permitting something to be done in its construction that will be detrimental to the improvement, we should condemn him and call him a fool, but I do think and I feel that we owe it to our industry, and the Association and above all to ourselves, to call attention to these things, whatever they may be, and be prepared to give such reasons for our contention as are advocated by us as an Association. We should either do this or acknowledge our disloyalty to the Association.

To take this advanced and progressive step requires courage and deliberate, careful consideration. We should know that the means and methods we advocate are just, reasonable and right, and we should then stand up for their enforcement as nearly as possible to bring that result about, and we should call on our entire membership and this Association to back us up in our contentions. We must first be right and then go ahead.

The Remedy.

There is and should be a remedy. During the life of our Association, we have endeavored to co-operate in every way possible, for the mutual interests of both municipality and Association, with the city engineers or other officials in charge of the construction of streets and the preparation of specifications under which the same should be properly constructed. We have met with some success, but not with that degree of success our material and efforts deserve.

Let me impress you with this thought and indisputable fact: THAT VITRIFIED PAVING BRICK IS THE BEST ARTIFICIAL PRODUCT IN EXISTENCE FOR THE PAVING OF STREETS AND HIGHWAYS. With the question of the quality of your material settled in your mind, what is the remedy to be applied, that we may uniformly produce the best and most perfect pavements in the world? I will give you my judgment as to the solution and remedy.

Our Association and the other individual manufacturers of paving brick should unite on a uniform and practical specification for the use of vitrified brick pavements. We should present this specification to the national engineering societies and municipal authorities, and endeavor to get their co-operation in its adoption for universal use. If we fail in this, we should demand of every municipality in this country the adoption of our specifications for use of vitrified brick, and, as man-

PAVING EXHIBIT ATTRACTED MUNICIPAL ENGINEERS



Splendid Showing of Paving Brick, and Model Road Construction Made by the National Paving Brick Mfgs. Assn. Several Sections of Brick Pavement, Which Had Seen Years of Hard Service, Were Shown, Demonstrating the Lasting Qualities of This the World's Best Road Surfing.



Jay Terry, Terry Bros. Co., Kingston, N. Y.

H. H. Fate, Pres. J. D. Fate Co.,
Plymouth, O.

W. D. Richardson, Shawnee, O.

ufacturers, refuse to sell our material unless these conditions were conformed to.

This may seem a drastic and radical remedy, but it is the only sure and safe solution. Our competitors, Asphalt Block, Sheet Asphalt, Creosote Wood Block, Bitulithic, Amiesite, Cement Concrete, Bituminous top-treated concrete and all other types of pavements that are controlled by patents or trade marks, force the use of their material under their own specifications, and if the engineering fraternity will accept them as they do, without objection, is there a legitimate reason why, with the comparative results as obtained with our material when properly used with these types of paving material, we should not succeed in forcing the use of a specification that would insure the results we have been laboring to obtain for the past eight years? With the adoption of a uniform specification, and the schooling of our membership, and especially the salesmen, in the knowledge of proper construction, our Association can devote its time to the education of those responsible for the carrying out of these specifications, and all the manufacturers of paving brick will receive a greater dividend on the reputation of their product than any 100 per cent cash dividend on any company stock that may have been declared, and your trouble from tests and other shortcomings will fade into air; but we can not accomplish this result without united cooperation, and we will never accomplish it if each member continues to evade a personal responsibility in bringing it about.

Another matter that I deem of special importance to our industry, and one which I think is within the legitimate province of our Association to give consideration to and act upon, is that wherein cities or other localities require that tests be made on each car-load of paving brick shipped for an improvement, and that the test shall be made before the brick can be delivered on the street to be improved, that in all such cases I recommend that our Association go on record as favoring the proposition that tests of shipments under these conditions shall be made at the factory or point from which shipment is made, at the expense of the municipality requiring these conditions; and that acceptance of the shipment shall be based on the tests made by the municipality at the point of shipment, and not at the point of delivery. This will insure the municipality the quality they require, and in all fairness and justice will protect the manufacturer.

Ways and Means.

During the past two years of our Association's existence, the method in effect, as provided by our Constitution and By-Laws, to raise the funds with which to carry on our work, has been based upon a payment of a fraction of a cent per square yard for each and every square yard of paving brick sold for public, private and street railway paving contracted for, sold and delivered during the preceding year. This method, if actually carried into effect as intended, and as it should be, would produce all the necessary funds with which to meet all of our requirements. Most of our membership observe and meet their every obligation under this method for the raising of our revenue, reporting and paying on the total

number of square yards sold and marketed by them, but I regret to say that some of our membership have not done so, and are not doing so, and I feel that it is but fair to all our membership to know that such conditions exist.

There does not seem to me to be any just reason why any member, regardless of the volume of business he may do, should fail to report and pay on his total yardage, and bear equally his burden of responsibility with every other member. If there is any just or legitimate reason why a member who sells and pays on 100,000 square yards, that being all he produces, while another who makes and sells 1,000,000 square yards should report and pay on but 500,000 square yards or 50 per cent of his just obligations as compared to the first illustration, then I want this membership to point out to me wherein such conditions are fair to all our membership. There is no fairer or more equitable distribution of the expenses of our Association than that it should be borne and paid for by our membership in the ratio of the volume of business done by each, and the payment of each quarterly installment should be met as promptly as that of your labor bills or other operating expenses. I fear that if the practice, herein referred to, should become the rule instead of the exception, our Association would soon flounder on the rocks of dissolution. The remedy is in our hands and it should have important consideration.

Let me impress upon you the great importance of your prompt payment of your quarterly accounts. Those of you who are tardy in paying your obligations should realize that, in drawing on futurity, you are not only taking up much of the valuable time of Mr. Macdonald from other and more important work for the Association, but you are taking up valuable time of our stenographers in writing you letters and calling to your attention your neglect of duty, and causing an additional, unwarranted expense in making collections. And may I ask of you to whom this reference applies, do you appreciate doing business in your own collection department along these lines? If you do, then you are not to be censured but pitied. This Association is your business. You should make such sacrifice as will insure for it your best efforts and attention.

I believe there should be some action taken at this meeting looking forward to the preparation of a pro rata plan for the raising of our revenue upon a fixed minimum plant basis, and a graded advancing schedule for the larger companies and corporations in as nearly an equitable proportion as possible, this fixed assessment to be paid quarterly without any necessity to report on the yardage sold, or for what purpose the product of any member may have been sold, and that new contracts be entered into with our membership and others upon this basis. That a committee of five, representing the largest and smallest producers, be appointed to solve this problem after ascertaining the approximate requirements for our annual expenses; that said committee report to the Board of Directors at their first regular meeting after the adjournment of this session, and that a special meeting of the Association be called to amend our Constitution and By-Laws to conform to

(Continued on Page 374.)

THE MAN WHO GUIDED THE DESTINIES OF THE CLAY SHOW



R. C. PENFIELD.

Mr. Penfield, the president of the Clay Products Exposition Co., is a most tireless worker and much of the credit for the success of the two shows is due to him.

1915 CLAY SHOW GOES TO SAN FRANCISCO

No Definite Date or Site Is Set for Next Year's Exposition But B. B. A. May Engineer Big Task

In a blaze of glory the Second Annual Clay Products Exposition closed Saturday night, March 8, after eleven days of success. Three hundred and fifty thousand visitors passed through the doors of the Coliseum, according to Treasurer Simpson.

Thursday night was the banner evening for attendance, although the closing night pushed close. The 2,000 clay-workers who were in the city attending the various conventions augmented the crowds on the first mentioned evening and the thousands of interested laboring men and their wives took advantage of the half holiday Saturday to see what burned clay offered them in the way of material for prospective homes.

The Second Annual Exposition was not as showy as the 1912 show, there being a more harmonious arrangement of the exhibits, but it exceeded its predecessor in value, in number of exhibits and in practical interest to those the show was intended to reach—the prospective home builder, the architect, the contractor and the factory owner.

Whether the exposition will be repeated in 1914 remains to be seen, but the present management is disposed to keep its promise and permit any of the national organizations to take hold and engineer it through.

Members of the Building Brick Association of America are said to be considering the project and it is likely that a proposal will be made at an executive session of that organization which will be held at an early date.

If this idea meets with the approval of the other members of the executive committee a location will be chosen from among the candidates seeking the show. New York is one of the most persistent bidders, although Cleveland, Pittsburg, New Orleans and other cities have signified an interest in the exposition for next year.

It is hardly possible that Chicago will be selected again as a site, although its central location makes it a most desirable location for an industrial show of such magnitude.

Whether the exposition will be held in 1914 or not will not affect the plans now under way to hold one in 1915 during the Panama Exposition at San Francisco. President R. C. Penfield of the exposition company has accepted the invitation of the Panama Exposition management to go to San Francisco and will leave within a few days to confer with the officials.

The 1915 exposition will be on a still grander scale, if the present tentative plans are executed, as a permanent burned clay building will be erected on a special site given by the government and everything pertaining to the industry will be housed therein.

President Penfield has devoted practically all of his personal attention to the Clay Show in the last two years and credit is due to him for most of the success that has been achieved. Secretary F. L. Hopley and Assistant Manager Simpson, also have been tireless in their efforts and shared the glory of well-earned success with President Penfield.

The March 1 issue of this journal gave a very complete account of the Clay Show, although a few of the exhibits were not mentioned. These follow:

BACH BRICK CO., CHICAGO.—The paneled pillars terminating



Display of Sewer Pipe, Hollow Block and Fireproofing Made by the Wm. E. Dee Co., Chicago. Harvey Motor Truck in the Rear Made by the Harvey Motor Truck Co., Harvey, Ill., Which is Controlled by the Same People.

the front wall in the exhibit of the common brick display of this concern, surmounted with potted ferns, was very novel in itself. The back walls, as well as the sides, were also built of common brick, and were decorated with various plants and greenery. The Bach Brick Co. was represented by Messrs. H. C. Bach, F. A. Bach, W. F. Bach, O. C. Bach and J. H. Bach.

THE PITTSBURGH TILE MFG. CO., EAST LIVERPOOL, OHIO.—This plant specializes in the manufacture of promenade and quarry tiles and had a unique and instructive display at the booth in the south end of the Coliseum. Specimens of brick made by this firm were open to public inspection at the booth, which was in charge of E. P. Lippincott, a traveling representative of the firm.

THE NATIONAL FIRE PROOFING CO.—This concern, which has offices and plants in all the larger cities, had a display of "Natco" hollow tile in all its different forms. A feature of the exhibit was a model residence built of hollow tile, which included exterior walls, roof, floors and partitions. The house was furnished complete, even to electric lights and hardwood floors. Various sizes of "Natco" tile were used in the construction of this model residence. The company was represented by H. K. Wild, F. H. Hoffman, W. J. Bannon and J. H. Hanchett.

THE FROST PROCESS CO., CHICAGO.—This concern, together with the Los Angeles Pressed Brick Co., both of which Charles Frost is president, had an interesting and attractive clay products display at their booth to visit. Mr. Frost is the inventor of the Frost system of making paving brick without repressing, giving rounded corners and indenting name on brick at the same time.

This process, it is declared, saves in the factory from 40 to 50 cents per thousand bricks, directly, and achieves other indirect advantages of great value. Notwithstanding these great savings it is pointed out by George W. Levett, who has charge of the exhibit, that the Frost process accomplishes the result without any necessity for investment in expensive machinery.

In the Frost process the represser is entirely eliminated



Frank L. Hopley, Secretary of the Clay Products Exposition Co., Whose Energy and Initiative Helped Make the Show a Great Project.



H. S. Simpson, Asst. Mgr. of the Clay Products Exposition Co., Who Was a Powerful Factor in Making the Show a Success.



George B. Drennan, of the J. D. Fate Co., Recently Elected President of the Machinery Men's Association.

by a round-cornered die costing no more than any other die and with molding space provided for the lug ridges. This is used in the auger machine. As the brick comes through this die, the bar of the auger machine being pushed out turns the two wheel casting attached to the auger machine. These wheels press down sections of the clay in the lug ridges, thus leaving the completed lugs on the brick, and the tread of the wheel molds on the face of the brick the name or trade-mark of the manufacturer.

As sole licensees under the Frost patents, the company is prepared to grant to paving brick manufacturers, factory rights of operation under these patents.

THE CHICAGO FIRE BRICK CO., CHICAGO.—A very complete display of various makes of fire brick, sewer pipe, flue lining, wall coping, hollow tile, fireproofing and other burnt clay specialties formed this exhibit. Visitors at the Exposition, who were interested in home building, were greatly pleased with the "Chico" hollow tile which is made by this company. This is a special dove-tailed scored tile with extra heavy webs and is made expressly for home construction. The firm was represented at the Exposition by City Sales Manager Anderson, Country Sales Manager Westerberg, C. A. Jacobs, T. J. Kellar and F. L. Higgins.

DAVENPORT BRICK & TILE CO., DAVENPORT, IA.—While brick manufacturers may not be interested in the construction of silos, yet the thousands of visitors who attended the Clay Exposition were very much interested in the section of silo which was constructed by this concern. This exhibit was under the direction of W. E. Berwald, son of John Berwald, the manager. This company also showed samples of vitrified sewer block made of shale clay, and hollow building block. A large amount of descriptive and illustrated literature was given visitors at this booth.

THE CHICAGO BRICK CO. AND THE CALUMET BRICK CO., CHICAGO.—These two had a joint exhibit, representing the proposed Chicago subway, made of common Chicago brick from both plants. Plans for the model subway were furnished by the Chicago Harbor and Subway Commission. F. W. Alsip and George S. Ruehle, superintendent of the sales department of the Chicago Brick Co., are in charge of the

feature. Lead pencils with the names of the firms printed in gold thereon were given to interested visitors.

WESTERN BRICK CO., DANVILLE, ILL.—A neat three-colored card was given hundreds of visitors who inspected this exhibit, showing a brick wall of old English design. The company has an annual production of 85,000,000 brick and operates two plants, one of which is the largest single unit in the brick-making world. The firm makes 30 different shades and textures of brick, all of which are medium in price, vitrified and impervious product, all made from shale and varying in color from light buff to black, and includes all shades of red and brown. This firm has the reputation of shipping a whole trainload of brick every day in the year.

THE CURTIS BRICK CO., GRANT PARK, ILL.—This concern had an exhibit at the Coliseum of its various grades of building brick. On the literature which this firm gave out to interested visitors is a statement of facts under the caption of "A Few of Our Large Contracts."

There are twelve large contracts noted in Chicago alone, in which 23,200,000 brick of this company were used. Twelve other large contracts are shown, in which the volume of brick used extended from 7,000,000 in the State Capitol building at Madison, Wis., down to jobs of 1,000, all of which proves that the product of this company is popular.

THE AMERICAN SEWER PIPE CO., AKRON, O.—This plant had an exhibit of segment block, the display of the clay products of this firm being about the same as shown last year. One length of 42-inch sewer pipe is shown. The actual construction of a sewer with segment block is also shown in detail. There was a 72-inch and 36-inch sewer length built of this block. Building brick, conduit and fireproofing blocks were shown. The display was in charge of H. E. Dixon, of Jackson, Mich., and W. O. Gleason, of the home office, Akron, O.

NATIONAL ROOFING TILE CO., LIMA, O.—A unique exhibit of tile roofing material of A1 grade was to be seen at this booth. A portion of a tile roof was on view showing the French pattern A in the red and green tile. Another portion of the roof showed the Georgian pattern, also in red and

(Continued on Page 378.)

409 JOIN FIRST LODGE OF CHALDEANS

Clayworkers Institute Temple No. 1 During Convention Under Most Promising Conditions—Smoker and Cabaret Follow Initiation

Four hundred and nine "uncultured" were taught the art of claycraft, in accordance with the mystic teachings of the Ancient Order of Chaldeans, at the institution of Chicago Temple No. 1, Wednesday evening March 5, in the main banquet room of the Auditorium Hotel.

This same four hundred and nine galloped across the sandy plains before Babilu to the clay pits of Nipur on the two-humped camels of the High Priests where practical lessons were given and today they have gone out into the world to enlighten the unlearned and the unskilled.

President Rogers, retiring president Bloomfield, Secretary Randall and all the other officers of the National Brick Manufacturers' Association confessed their inferior knowledge and received the instruction.

Secretary Fiske of the B. B. A., Secretary Blair of the N. P. B. M. A., and almost every prominent manufacturer and dealer in clay products in the land, likewise, paid tribute to the wisdom and the skill of the Chaldeans and were given the lesson as taught by the Most Venerable Nebo Varney.

None was too mighty or none too insignificant. All humbled themselves before the throne of the all-wise Nebo and all drank from the fountain of wisdom.

It was a big night—one that will linger long in the memory of the 1913 convention delegates.

From the first strains of the one-stringed lute played by Zippo Matz, the Nimble-Fingered Lutest, who thumped the opening march in the ceremonies attendant to the lighting of the Sacred Temple lamp, to the click of the last electric light button among the hundreds of tiny bulbs that shed their beneficent light over the assemblage, there was not a dull moment—not a bored spectator.

The festivities opened at 8 p. m. They closed as the chimes tolled off the midnight hour.

And today, the three hundred and seventy-five, wearied as they may be from the pilgrimage to the Nipur clay fields, still bear the smile that was indelibly branded on their faces for all time to come by the optimistic touch of the Exalted Ren and the Beloved Prophet and the Learned Fo.

One lone barbarian among the many was selected to exemplify the lessons of the three F's. This young man, strong of arm and alert of mind, was chosen because he had confessed having secretly learned from a friendly Chaldean some of the mystic practices of the learned race and gave the most promise of all.

Seized from among a group of boasting novices he was taken before the assembled Priests in the Temple and there given the light of a new born Chaldean.

Beichler—E. G., he claimed to be, and he boasted allegiance to the tribe of Chambers Brothers, makers of brick machinery.

The novice proved a willing pupil of the Venerable Nebo and his assisting priests, and, although he found the going somewhat difficult at times he managed to stand the many tests that were given him to substantiate his claims for consideration as an able follower of the customs and practices of the Chaldeans.

Despite the fact that the Temple priests were somewhat taxed by their manifold duties during the prepara-



E. G. Biechler, Western Representative Chambers Bros. & Co.,
Who Rode the Chaldean Hoary-Haired Goat.

tions for the Clay Show and the entertainment of the delegates to the various conventions, they acquitted themselves in such a manner as to show the possibilities of the new secret society and those who saw the work predict a great future for the Chaldeans.

The initiatory work of the Chaldean priests was not the only means of entertainment for the several hundred applicants for membership and it was the unanimous expression of those around convention headquarters that the closing program was one of the most enjoyable ever given on a similar occasion.

The cabaret or vaudeville show had several original numbers, each one of which terminated in a pleasant surprise, and the only complaint made was that the entertainment did not continue indefinitely. Chairman Binyon, C. L. Rorick, C. H. Alsip, W. P. Varney, E. K. Cormack and Adolph Hottinger of the entertainment committee of the Chicago Clay Club, were responsible for this portion of the evening's pleasure and they were given an ovation for the admirable way in which they did their work.

From the moment the "Indignant Wife" broke through the guarded Temple doors in search of John Moroney, until the dark-eyed Fatima appeared to give "her" rhythmic "Dance of the Seven Veils," there was not a dragging moment in the program. The much-advertised boxing match between Harley H. Fate, president of the J. D. Fate Co., and James Hoskins, the general manager of the Terre Haute Vitriified Brick Co., came off as scheduled and, despite its unhappy "interference" by the police, proved one of the really entertaining features of the evening. This portion of the bill is graphically described by our own boxing expert, M. J. Williams in the sporting section of this number.

So ably conducted was this bout that four of the participants—Fate, Hoskins, Charlie Stevenson and C. L. Ror-

DETAIL OF THE ARTISTIC \$20,000 EXHIBIT OF THE



No. 1—One corner of the Exhibit showing one of the handsome pillars to the approach of the English Inn. No. 2—The crystal fountain in the center of the roadway. No. 3—Looking down the roadway to the English Inn. No. 4—Entrance pillar to one of the pergolas. No. 5—A column of brick that attracted considerable attention. No. 6—Views of the north and south pergolas. No. 7—Looking down the south pergola. Nos. 8 and 11—Two panels of the Hydraulic-Press Brick Co. Nos. 9 and 10—Two panels of the Thos. Moulding Co.

CHICAGO FACE BRICK ASSOCIATION AT THE CLAY SHOW



Nos. 12 and 13—Two panels of the Bonner & Marshall Co. Nos. 14 and 21—Two panels of the Meacham & Wright Brick Co.
 Nos. 15 and 16—Two panels of the S. S. Kimbell Brick Co. Nos. 17 and 18—Two panels of the Jenkins-Reynolds Co. Nos. 19 and
 20—Two panels of the Wisconsin Lime & Cement Co.



ick—an offer was made after the show by a well-known theatrical producer to bill the quartette for the regular vaudeville stage at a princely salary.

MAKES REPLICA OF CHALDEAN EMBLEM.

Sculptor Mulligan of Chicago Art Institute Models Man-Headed Bull in Plastic.

Sculptor Mulligan of the Chicago Art Institute, who had charge of the class of clay modelers at the Clay Products Exposition, modeled an exact replica of the emblem of the Ancient Order of Chaldeans—the Man-Headed Winged Bull, the original of which was unearthed several years ago in the ruins of an Ancient Chaldean city and which reposes in the British Museum today.

This replica was completed in time to be exhibited at the first meeting of Chicago Temple No. 1 when 409 candidates were initiated into the mysteries of the order, but, through some oversight, it was not delivered at the lodge rooms.

The original of the Man-headed bull, which is in the British Museum, is a bas-relief and made from terra cotta. It is in perfect condition today and is a proof of the high regard the Ancient Chaldeans held for clay products and their proficiency in modeling.

In accordance with the ritual of the clayworkers' new secret order the emblem of the bull must be displayed at every Temple meeting and the replica modeled by Sculptor Mulligan will be used by Chicago Temple No. 1. As other Temples are instituted throughout the country copies of this replica will be cast and sent to them.

NOTICE TO CHALDEANS

Your membership cards will be mailed to you at an early date together with a prospectus showing the plans of the Supreme Temple.

In the meantime those who wish to organize local temples in their own cities will please notify the undersigned.

IVERSON C. WELLS,
Supreme K. of T.,
405 Plymouth Ct., Chicago.

FACE BRICK DEALERS PLAN ORGANIZATION.

Object, Closer Working Relationship Between Manufacturer and Dealer.

Dealers and salesmen from Ohio, Indiana, Michigan and Illinois held an informal meeting at Room 8 Thursday morning for the purpose of considering plans for the formation of the Face-Brick Dealers' Association.

R. L. Queisser, of Queisser-Bliss Co., Cleveland, O., acted as chairman of this meeting, the session lasting about two hours.

A committee was to be appointed within the next few days for the purpose of working out further plans and to form a slate of officers.

F. Lawson Moores, of the Moores-Coney Co., of 111 E. Fourth St., Cincinnati, O., will send the dealers and salesmen interested, notice as to the time and place of meeting. It is possible, not official, that the meeting may be called for Columbus, O., within the next few weeks.

Those who attended the meeting last week are enthusiastic about the work of the association and it is believed that it will prove to be one of the live wires in the clay working industry as far as the sales department is concerned.



A. A. Oldham, of Bonnot Co.,
Canton, O.

TWO INTERESTING EXHIBITS AT SECOND CLAY SHOW



Display of the Los Angeles Pressed Brick Co., Showing Large Variety of Wares Produced by this Progressive Company.



Display of the National Bureau of Standards, Showing Methods of Testing Clays.

BRINGS EXHIBIT TO CLAY SHOW 2,300 MILES.

Los Angeles Pressed Brick Co. Has One of the Most Artistic Displays.

The Clay Products Exposition was a kaleidoscope of beautiful colors, artistic designs, and combinations. It showed the brains, the untiring energy and the inventive genius of the men engaged in this great clay manufacturing industry, which, with our rapidly decreasing forests, will very soon be about the only dependable building material.

The displays made by more than 150 exhibitors from all parts of the United States are all of the highest quality and it would be extremely difficult to single out any one exhibit were it not for the enterprise shown in coming 2,300 miles from the Pacific Coast to help out their eastern brother craftsmen and in their willingness to place their work alongside of the best in the entire country that "Brick and Clay Record" must mention the Los Angeles Pressed Brick Co. and admit that its product did not suffer any in comparison.

This exhibit, a view of which is shown on the front cover of this issue, was very artistic and contained a great variety of products. There were pressed and enameled brick in many pleasing colors, impervious face brick, "ruffed" brick in polychrome, mantel and floor tile, faience tile in beautiful wine and autumnal colors with roofing tile in a variety of patterns in both natural red and green glaze. This concern makes other clay goods not shown in the display, such as sewer and chimney pipe, flue lining, conduits, drain tile, fireproofing (hollow tile), and fire brick and fire blocks for almost every conceivable requirement. The Los Angeles Pressed Brick Co. was founded in 1887 by an old pioneer in the brick business, Chas. H. Frost, who began making pressed brick in Chicago in 1877 at Laurel St. and 38th Court, under the firm name of C. H. Frost & Co. This company afterwards was formed into a corporation. Mr. Frost has withdrawn from active work with the company, being succeeded by his son, Howard Frost, as president of the company.

The company is looking forward with pleasure to the 1915 show.

U. S. HAS INTERESTING EXHIBIT.

Bureau of Standard Shows Instrument that Measures Displacements to a Very Fine Degree.

Among the interesting apparatus shown in the exhibit of the National Bureau of Standards of Pittsburgh and Washington, was an interferometer, an instrument used for measuring displacements as small as 1/100,000,000th of an inch. The interferometer was mounted on a heavy clay beam and by pressing on the beam with the finger a deflection of about 1/100,000th of an inch was shown. The interferometer is used in measuring displacements which cannot be detected by the microscope. It is used in determining wave lengths of light, in determining the coefficient of the expansion of metals in grinding optical lenses and in measuring standards of length.

Among the other exhibits of the Bureau of Standards was a duplicate of a brick pier 4 ft. x 4 ft. x 12 ft., crushed in the Pittsburgh laboratories by the new 10,000,000 lb. Olsen testing machine. The pier withstood a load of 6,580,000 lbs., an exclusive account of which appeared in "Brick and Clay Record" at the time.

Standards of weights and measures, electrical standards and standards for many engineering materials were shown in the exhibit of the bureau.

A small platinum electric furnace used in determining the de-hydration and softening points of clays was shown in operation.

Samples of refractories whose melting points were carefully determined in the vacuum electric furnace were also shown together with a variety of refractory crucibles.

The exhibit was in charge of Prof. A. V. Bleininger, G. H. Brown and W. A. Greenwald of the Bureau of Standards, from the laboratories in Pittsburgh, Pa.

The publications of the Bureau of Standards were on exhibition. Copies of these may be secured by application to the Director of the Bureau of Standards, at Washington.

This exhibit was probably one of the most valuable from a scientific standpoint of any at the Coliseum and was given close attention by visiting clay workers.



N. B. M. A. ELECTS ROGERS TO HEAD ASSOCIATION IN 1913

(Continued from Page 326.)

sort of a baby, and I am a little tow-head today. It was all new to me, and as one of the little fellows I timidly came in, but I found a great big association in which every one was equal. Small as my works were, and new as they were, I was on an equality with the biggest of the big fellows. The association had been so conducted that we were all at home. We have all benefited. There was no one great big interest exploiting the others. There was room for the face brick manufacturer and the paving brick manufacturer, and the fire brick manufacturer, and in a certain way the machinery men. We could all come in here and all help one another; this was a good policy, and it was the policy of no one man, but of a set of men commencing as pioneers, when the thing was little, to meet the obstacles and difficulties. Among those men was the man whom I want to nominate for your president.

I speak so much of him because some of you western men may not get away down east, but there is a large state right next to my own, the State of New York, which was able to furnish a pretty good president for these United States for some seven years, and I thought it might furnish a good president for this association.

I want to tell you what I found of this man. I found him among those who are managing this association. He has been an active member, and has given his counsel for twenty-one years. A man so simple and unassuming that we could take him for one of the smaller manufacturers; but when it came about that we were invited to his home city, Rochester, for our convention, no large city, he was one of the men who contributed heavily to make our welcome so royal. He was too modest a man to have told me anything on this subject, but I have heard it rumored that some thousand dollars came in the name



Three Views of the Exhibit of the Hydraulic Press Brick Co. Showing Various Styles of Face and Enamel Brick Made by this Company at Its Twenty-six Plants.



The "Made in Iowa" Exhibit of the Iowa Association, Showing a Variety of Wares Made by the Iowa Clay Manufacturers.

of his concern toward the expense of entertaining us, and that as much as that again came out of his private pocket.

We certainly had a royal welcome there, and the association grew as a consequence of it. And we have had the benefit from such a leadership during the years that have followed.

I feel that we need to have such policies continued. We want a man who can be progressive enough to be a pioneer in this, to be progressive enough to lead the association now that it is great and strong. I do not want to take up more of your time. You all know that I wish to place in nomination Mr. W. H. H. Rogers. (Applause.)

R. G. EISENHART: I want to second that nomination, and if there are no other nominations, I move, Mr. Chairman, that the rules of the association be suspended, and that the secretary be instructed to cast the ballot, and that Mr. Rogers be declared elected.

(The motion was duly carried unanimously.)

PRESIDENT BLOOMFIELD: The next in order is the nomination for first vice president.

A. E. HUCKINS: I rise to nominate as first vice presi-

dent a man whose ability, integrity and intensity of purpose is well known to every member of this association; a man who comes from one of the greatest clay states in this Union; a man who has developed this industry in this state to a point where we, as neighbors, are glad to point to his plant as a model. A man who, in his local community is strong and if that community desires anything they know what man to get to go after it. A man who has the reputation in that community of being for all.

It gives me a great deal of pleasure indeed to at this time nominate Mr. Eben Rodgers, of Alton, Ill., as first vice president.

WARREN W. ITTNER I want to second that nomination, and move that the same procedure be adopted in the case of the first vice president as was adopted in the case of the president, if there are no further nominations.

ANTHONY ITTNER: Will the gentleman who has just spoken, give his name. (Mr. Huckins did as requested).

PRESIDENT BLOOMFIELD: I want to state that this young man who has just spoken, is the worthy son of a noble father; and he knows it too.

Now, gentlemen, you have heard the nomination of



Section of International Clay Products Bureau Exhibit illustrating the Proper Laying of Sewer Pipe.



Section of the International Clay Products Bureau Exhibit, Showing Methods of Testing Sewer Pipe.



Ornamental Garden Wall Shown by the Curtis Brick Co., Chicago.



Parcel Post Brick House, for Which Contributions Were Sent from All Parts of the Country.

Mr. Eben Rodgers for first vice president, properly seconded; what is your pleasure?

(The motion was carried unanimously.)

Nominates Mayer for Second Vice President.

PRESIDENT BLOOMFIELD: The next in order is the nomination for second vice president.

W. M. HODGES: In the great State of Pennsylvania, in the city of Philadelphia, some years ago, I joined this association; and since that time I have been in constant attendance at every one of your conventions.

I have learned to know you gentlemen personally, and it gives me great pleasure today to say to you that I believe this room has never contained a finer body of men than is here assembled today; loyal to each other in every respect. Fraternity prevails. We have met together only on this occasion to do each other good. We have our difficulties and our troubles in our individual ways, and on this occasion we meet together and each man helps the other to work out his individual success.

In that state of Pennsylvania, which as you all know, contains perhaps the largest accumulation of high class clays of any state in these great United States, the possibilities for advancement are greater than I can tell you. We have, however, problems that must be solved. In that state, on account of its mounds and hills, we especially need good roads; and we find that the good roads problem today needs our special attention. I ask of you gentlemen to assist us in that end that we may, in the years to come, feel proud of Pennsylvania, not only for her great manufacturing industries, but because she has the finest roads in the world.

At the seat of government at Harrisburg, we must labor with those in charge of affairs at the present time, that they may be convinced that brick is the permanent roadway. And, gentlemen, there is a man in that state of Pennsylvania, who perhaps has put up a harder fight than any other one man that this result may be obtained; there is no distance too far for him to travel; no task too great for him to undertake in order that we may eventually realize our ideals.

It gives me great pleasure to place in nomination for the second vice president Mr. C. P. Mayer, of Bridgeville, Pennsylvania. (Applause.)

R. G. EISENHART: I second that nomination.

PRESIDENT BLOOMFIELD: With the usual course of procedure?

R. G. EISENHART: Yes.

PRESIDENT BLOOMFIELD: Gentlemen, you have heard the nomination of Mr. Mayer of Bridgeville, Pennsylvania, as your second vice president. What is your pleasure?

(The nomination was carried unanimously.)

PRESIDENT BLOOMFIELD: You have elected Mr. C. P. Mayer as the second vice president.

The next in order is the nomination for third vice president.

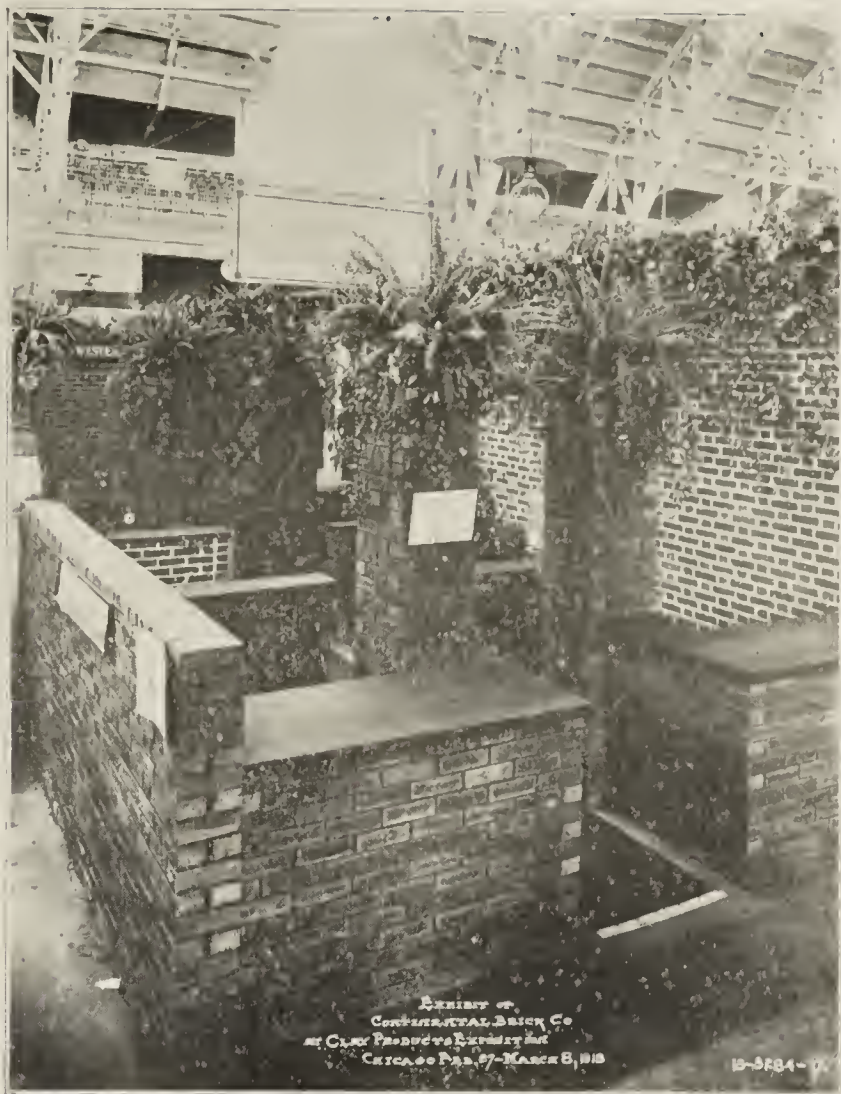
Deckman is Given Fourth Post.

M. E. GREGORY: I would place in nomination for third vice president of this association the name of a gentleman whom you all know; a man that you, as brick makers, know, and know well, because of his noble qual-





Booth of the Clayworker, Indianapolis, Ind.



Display of the "Con-tex" Brick Made by the Continental Brick Co., Aledo, Ill.

ities and his strict attention to the work and his success in the work.

It gives me great pleasure to place in nomination the name of Charles J. Deckman, of Cleveland, Ohio, a successful manufacturer of both common and paving brick, as third vice president of the association. (Applause.)

CHARLES M. CROOK: It is always a privilege to pay a tribute of friendship and admiration to Mr. Deckman. I do this in seconding his nomination for this office. I am sure that you gentlemen will make no mistake when you select him.

PRESIDENT BLOOMFIELD: Mr. Gregory, does your motion, and, Mr. Crook, does your second of that motion, follow the usual course? That is, by consent of the convention the nomination of Mr. Deckman as third vice president is made unanimously?

MR. CROOK: Yes.

(The nomination was carried unanimously.)

PRESIDENT BLOOMFIELD: Gentlemen, you have

elected Mr. Charles J. Deckman as your third vice president, and the secretary will so record it.

The next in order is the election of the secretary.

GEORGE CLIPPERT: Mr. Chairman, it gives me very great pleasure today to present before this convention the name of a gentleman whom I have known ever since I have joined this association, and which I will say was some twenty years ago. I know him to be a true and honest friend of the brick maker. Every brick maker and machinery man in this great country of ours,—and I dare say, a great many foreign countries,—know him. I am going to ask this convention today, as a special favor, to make his election unanimous for the splendid service he has given this association.

I take pleasure in presenting to you the name of our friend, Theo. A. Randall. (Applause.)

A MEMBER: I second the nomination.

Randall Is Unanimously Re-elected.

PRESIDENT BLOOMFIELD: This is one of the





The Kilties Band, Which Accompanied the Canadian Delegation and Aroused Much Enthusiasm at the Congress and the Coliseum.

greatest pleasures of my life. You have heard the nomination of Theo. A. Randall to succeed himself as secretary of this association.

(The nomination was carried unanimously.)

PRESIDENT BLOOMFIELD: Miss Wallace, will you kindly cast the ballot for Mr. Randall for secretary for the ensuing year of the National Brick Manufacturers' Association—the greatest organization of its kind in the world. (Applause.)

Now, gentlemen, we have another vacancy, that of treasurer.

ANTHONY ITTNER: I don't know that anybody has been talked of for this special duty or not. I don't know that the motion that I am going to make is necessary. I think that the one whom I am going to nominate for this position, at the last meeting, was elected for life; (Laughter and applause) and if that is not the case, in my brain I had that idea. His case is that of brother Randall—I guess he is elected for life, and these proceedings that we are going through from year to year, it seems to me, are taking up unnecessary time. (Laughter and applause.)

SECRETARY RANDALL: You would not get your story.

MR. ITTNER: I think that we might as well install these people for life, and be done with it. Now, I have more than a special pleasure in presenting to this convention our present treasurer for re-election, and I would like, if our rules would permit it, to add for life. Brother Sibley—I present him for treasurer.

MR. SMITH: I second the nomination.

PRESIDENT BLOOMFIELD: You have heard the nomination, regularly seconded, of John W. Sibley, who always gives us a surplus, as treasurer of this association for the ensuing year. What is your pleasure?

ANTHONY ITTNER: With the distinct understanding that these jokes shall continue.

PRESIDENT BLOOMFIELD: Correct. I will accept the amendment.

MR. SMITH: I accept the amendment to the nomination.

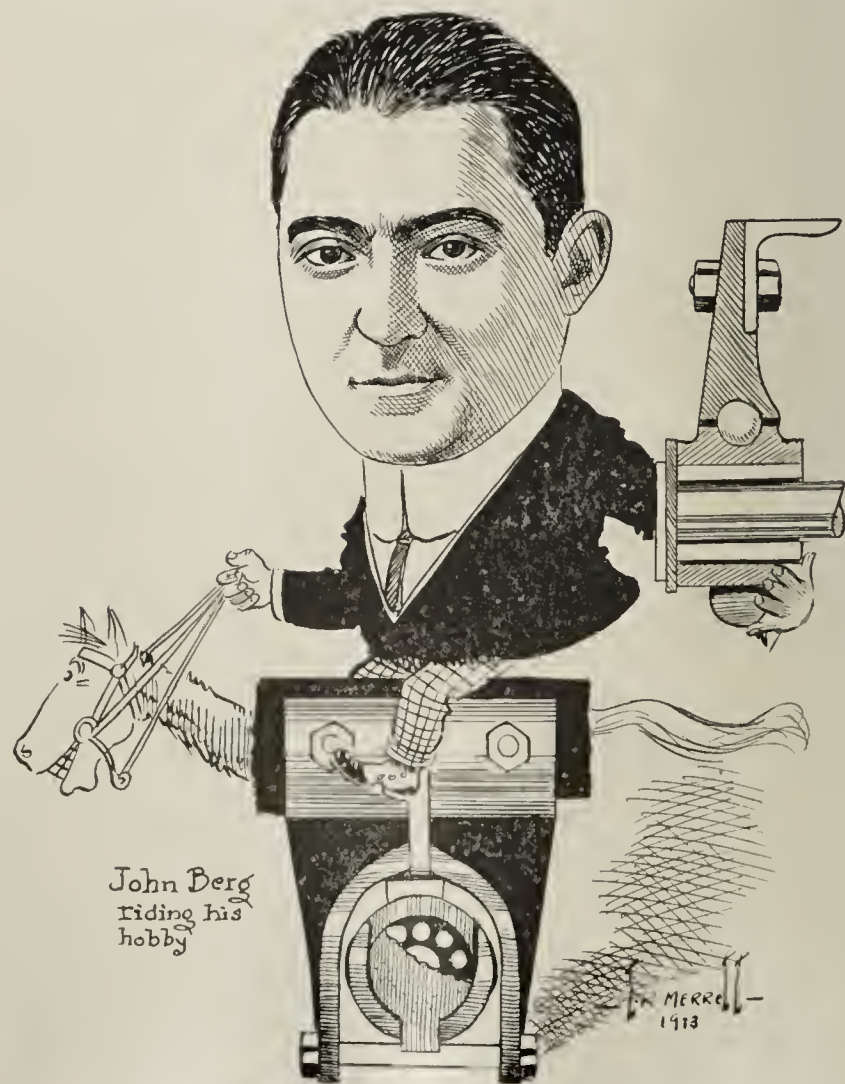
PRESIDENT BLOOMFIELD: Gentlemen, you have

heard the original motion and the amendment. All those in favor signify by saying aye.

(The motion and amendment were carried unanimously.)

PRESIDENT BLOOMFIELD: Gentlemen, you have elected unanimously John W. Sibley of Birmingham, Alabama, as the treasurer for the ensuing year.

SECRETARY RANDALL: The office of assistant secretary is appointive, and is not elective. We have a standing committee on technical investigation, a standing committee from which one member retires each year. That standing committee consists now of W. D. Richardson, whose term expires in 1917; Prof. A. V. Bleining, whose term expires in 1916; Prof. Ross C. Purdy,





whose term expires in 1915; D. V. Purington, whose term expires in 1914; and Prof. Edward Orton, Jr., whose term expires in 1913, the present time. It is the proper thing, I think, to re-elect Mr. Orton as a member, and permanent secretary of this committee on technical investigation.

Honors Orton for Re-Election.

ANTHONY ITTNER: Mr. President, I will ask you for information; is that election to be by this body?

PRESIDENT BLOOMFIELD: Yes.

ANTHONY ITTNER: If I may be permitted to be recognized a second time?

PRESIDENT BLOOMFIELD: I recognize you, sir.

ANTHONY ITTNER: For a worthy purpose I would like to place in nomination especially the name of Mr. Orton for re-election to that committee and to act as its secretary, because I know of the value of Mr. Orton's services. I know him as a man in addition to his value on this committee by reason of his technical knowledge, and I want to say for Prof. Orton that, in all my rubbing

of shoulder to shoulder with men, and with humanity at large, without reference to politics, religion or nationality, Edward Orton stands among the highest in my estimation. (Applause.)

And I take especial pleasure in placing his name before this convention for re-election to this committee.

A MEMBER: I second the nomination.

PRESIDENT BLOOMFIELD: Gentlemen, it has been regularly moved and seconded that Prof. Edward Orton succeed himself as a member and secretary of the committee on technical investigation.

(The nomination was unanimously carried.)

PRESIDENT BLOOMFIELD: Professor Orton, I have the pleasure of congratulating you.

PROF. ORTON: Thank you.

ANTHONY ITTNER: Is Mr. Orton here?

PROF. ORTON: I am here.

ANTHONY ITTNER: If I had known he was here, I would not have spoken that way. (Laughter and applause.)



The Coliseum Where 350,000 People Attended the Greatest Clay Show Ever Held.

SECRETARY RANDALL: Mr. President, it has always been the rule that the next in the natural order of business would be the installation of officers, but we have with us a gentleman whose time is very precious, who comes here on behalf of the Mayor, who is not in the city, to welcome us to Chicago, and I move that we suspend our regular order of business and hear Mr. McGann, of the city administration.

ANTHONY ITTNER: I second the motion, if a motion is necessary.

PRESIDENT BLOOMFIELD: With the consent of the house we will proceed to hear Mr. McGann. (Applause.)

Pays Tribute to Members of Industry.

PRESIDENT BLOOMFIELD: I am going to call on Charles J. Deckman, of Cleveland, Ohio, to respond to Mr. McGann. Mr. Deckman, will you kindly come forward?

C. J. DECKMAN: Mr. Chairman, Mr. McGann, representative of his Honor, the Mayor, Ladies and Gentlemen of the Convention: I assure you that I voice the sentiments of every member of this convention when I say to you that we are very grateful to you for these very kind words of admonition and welcome, and that we appreciate most highly the sentiment expressed by them.

Our association is organized for the purpose of carrying

out any principles of business that are for the best interests of our membership.

The membership itself here is composed of three prominent factors, to give expression in that sense of the word.

The first and smallest, although not of the least importance, is our journalistic membership. The members who are the editors and publishers of our trade and commercial journals.

These men in no small measure are entitled to the credit for these splendid results that have been attained by our organization, and while I do not want to name specifically any particular journal as against another journal, I do unhesitatingly say that to the Clay Worker, to the Brick and Clay Record, to the American Contractor, to the American Architect, to the Engineering News, and to the Engineering Journal, and other like trade papers should be given our heartfelt thanks for their efforts in behalf of our industries.

A second and very prominent part of our membership are those who manufacture for us, the machinery that we use and the other appliances that are needed—some of us financially—(laughter) for the very splendid progress and results that they have brought about for the advancement of the methods for producing our wares. This class of our membership, as I say, is progressive, and it is up to date. They are clean and gentlemanly members, jolly good fellows, some of whom come to our annual conven-



Sewer Pipe, Brick, Fireproofing, Jugs, Crocks and Cooking Utensils Made Up This Attractive Exhibit Shown by the Robinson Clay Products Co., Akron, Ohio. Interesting Crowds Watched the Potter at the Wheel as He Skillfully Shaped the Ware.



Fred. A. Bach, Bach Brick Co., Chi.



F. Titterton, Rock Island Ill.



W. J. Baird, Baird Machine & Mfg. Co., Detroit.

tions with their hammers out, but all of them come here with that smile that will not come off.

They are progressive and in this they do not stand in the same light as the tramp who says that "Ten years ago I used Pear's soap and have used none other since." (Laughter.)

A third class of our membership is composed of those who are engaged in the manufacture of clay products, from the simplest drain tile, or a more simple piece of clay product if there be one, to the most artistic piece of terra cotta or encaustic tile, or other high art ware that is produced from clay.

These men are in a class exclusively by themselves. They are the good fellowship class; they come to these conventions for the purpose of renewing old acquaintances and making new ones. They give the glad hand of fellowship to every one with whom they come in contact, and it is a delight and a pleasure to meet this class of our membership, without any disrespect to the other two classes previously referred to. (Applause.)

These Go Out and Fetch the Cow.

These men have nothing to sell, but believe me, that when they go out for trade in their respective communities, they are not like the fellow who sits down in the meadow and waits for the cow to back up and be milked, but they go after the cow. (Laughter.)

Perhaps I am making this too long.

PRESIDENT BLOOMFIELD: Go ahead.

MR. DECKMAN: I have a wonderful speech here—that is in my own mind. (Laughter.)

These annual conventions of ours are for the purpose of listening to papers on technical and scientific questions, and for the discussion of other subjects, and following this the election of officers—which in this instance has preceded; I have my order in an irregular form—the election of officers, then comes an attendance at an annual banquet at which we are separated from about three dollars per plate (laughter), after which we listen to the oratory of those higher up in authority, that has been pent up for the past twelve months, greatly to our admiration, or disgust as the case may be, (Laughter,) but wholly to the satisfaction of those who are giving us their hot air.

Following this it is our painful duty to adjourn and return to our homes; and I want to assure you, Mr. McGann, as representative of this delightful city, that when we shall have returned to our homes, I know we can feel that no act of any member of our association, or any visitor for that matter, will cast discredit upon our association, or cause you to blush with shame for their conduct, and we must heartily and truly thank you for your very cordial welcome. (Applause.)

PRESIDENT BLOOMFIELD: The next in the order of program is the installation of officers, and I am going to appoint R. C. Penfield and Ellis Lovejoy as a committee to bring your newly elected president to the platform.





The cartoonist has caught the above visitors at the Clay Show and Convention in characteristic poses. At the left is H. H. MacDonald, the Assistant Secretary of the N. P. B. M. A.; R. A. Bradford, the Auburn Wagon Man, is next, and Charlie Carpenter of Martin's Ferry, Ohio, who recently sold his plant and is preparing to go to Canada, is the third. J. C. Schaffer of Tiffin, Ohio, the man who juggles kilns, and R. G. Ferguson, the Massachusetts Fan Co.'s manager, is shown drying off a brick.

(President elect Rogers is escorted to the platform.)

PRESIDENT BLOOMFIELD: Mr. Rogers, behold your association; gentlemen, behold your president.

The next is the installation—

SECRETARY RANDALL: Are we not going to have a speech from Mr. Rogers?

PRESIDENT BLOOMFIELD: Yes, we will have a speech from Mr. Rogers?

W. H. H. ROGERS: Ladies and gentlemen: I assure you it is a pleasure for me to be elected your presiding officer during your deliberations at this convention. I hope my rulings will be such as will tend to maintain the splendid condition in which we find this organization today, and that its affairs will be conducted as well in the future, and with that harmony which has always existed during the past twenty-seven years.

Ladies and gentlemen, I thank you most heartily for electing me to the presidency, and I hope we will have a very pleasant and profitable convention. (Applause.)

PRESIDENT BLOOMFIELD: I shall appoint Warren W. Ittner and Mr. Yates as a committee to conduct Mr. Rodgers, your first vice-president, to the platform.

(First Vice-President Rodgers was escorted to the platform.)

PRESIDENT BLOOMFIELD: Gentlemen, and ladies of the convention: your first-vice-president, Mr. Eben Rodgers.

New Vice-President Takes Station.

MR. RODGERS: Mr. President and ladies and gentlemen: I wish to thank you for this honor; I certainly appreciate it and I will try to make my motto the speech of the gentleman who so kindly nominated me, and if I come anywhere near living up to that, I believe you will be satisfied. I thank you very much. (Applause.)

PRESIDENT BLOOMFIELD: I shall appoint Mr. Talbot and Mr. Bleininger, as a committee to conduct Mr. Mayer, your Second Vice-President, to the platform.

(Second Vice-President Mayer was conducted to the platform.)

PRESIDENT BLOOMFIELD: Ladies and gentlemen of the convention; I take great pleasure in introducing to you Mr. C. P. Mayer, your second vice-president. (Applause.)

MR. MAYER: Mr. Chairman, ladies and gentlemen of this convention: I have not had the pleasure of realizing the honor or being elected even to a Second Vice-Presidency of an organization made up of such a vast concord of intelligent men. It is an honor, you will understand,



Anton Vogt, Con. Eng., Tecktonius Mfg. Co.



E. C. Tecktonius, Pres., Tecktonius Mfg. Co.



F. A. Tecktonius, Sec. & Mgr., Tecktonius Mfg. Co.

to impress, or at least it ought to impress any ordinary individual.

In every man's history of life, if he amounts to anything, or if he is a man who does things, there are periods back to which in future life he can look with pleasure. You, in this convention this morning, have established in my history one of those periods for which I thank you cordially.

The fact that I was elected third vice-president last year, and now this year your second vice-president, makes me feel that in the eyes of the members of this convention, I have made good, and I thank you for the honor that you have conferred upon me. (Applause.)

PRESIDENT BLOOMFIELD: I will appoint Mr. Gregory and Mr. De Rosay as a committee to bring our third vice-president to the platform.

(Third Vice-President Deckman was escorted to the platform.)

PRESIDENT BLOOMFIELD: Gentlemen and ladies of the convention; allow me, with great pleasure, to introduce to you your third vice-president, Mr. Deckman, of Cleveland, Ohio. (Applause.)

CHARLES J. DECKMAN: Mr. Chairman, ladies and gentlemen of the convention: I am somewhat unaccustomed to occupying a position on a platform, and feel somewhat the delicacy of making remarks from this position in the hall. I do not know whether the position of Third Vice-President is one of a very great deal of service, and I am at a loss to know whether or not I have drawn a blank. (Laughter.)

But I want to say to you, Mr. President, and to your successor, Mr. Rogers, that so far as this position is concerned, if there is any duty to perform, I want you to call upon me to perform it, and if I fail it will be the first official undertaking that I have ever experienced in which I have made a failure. (Laughter.)

When I believe in a thing and when I take interest enough in it to be active, and when I am active, I endeavor to produce results, and if I can not do it one way I endeavor to get around it another; but always to do that which I undertake right and with justice to all with whom I have to deal.

I marvelled greatly when I listened to the speeches which were made by those presenting the several candidates for honors to this convention, at the greatness of your splendid line of officials, and I wondered when I knew that I was to be nominated as third vice-president, whether or not some one would flash that character of talk to this intelligent audience concerning me, and I could scarcely lead myself to believe that it was possible that I belonged to that array of talent as designated in the several remarks in placing these gentlemen in nomination who preceded me.

ANTHONY ITTNER: You will, Mr. Deckman, after you have served your three years of apprenticeship.

CHARLES J. DECKMAN: Then, sir, if that is a condition, I assure you that the more service I have to perform the better I will like it.

Now, gentlemen, and ladies of the convention, with these rambling remarks I trust you may repose such confidence in me that will enable me to take care of the arduous duties of the position of third vice-president of this Association; and I thank you most sincerely. (Applause.)

Secretary Randall is Escorted to Chair.

PRESIDENT BLOOMFIELD: I shall appoint the Hon. Anthony Ittner and Prof. Edward Orton, as a committee to conduct our new secretary to the platform.

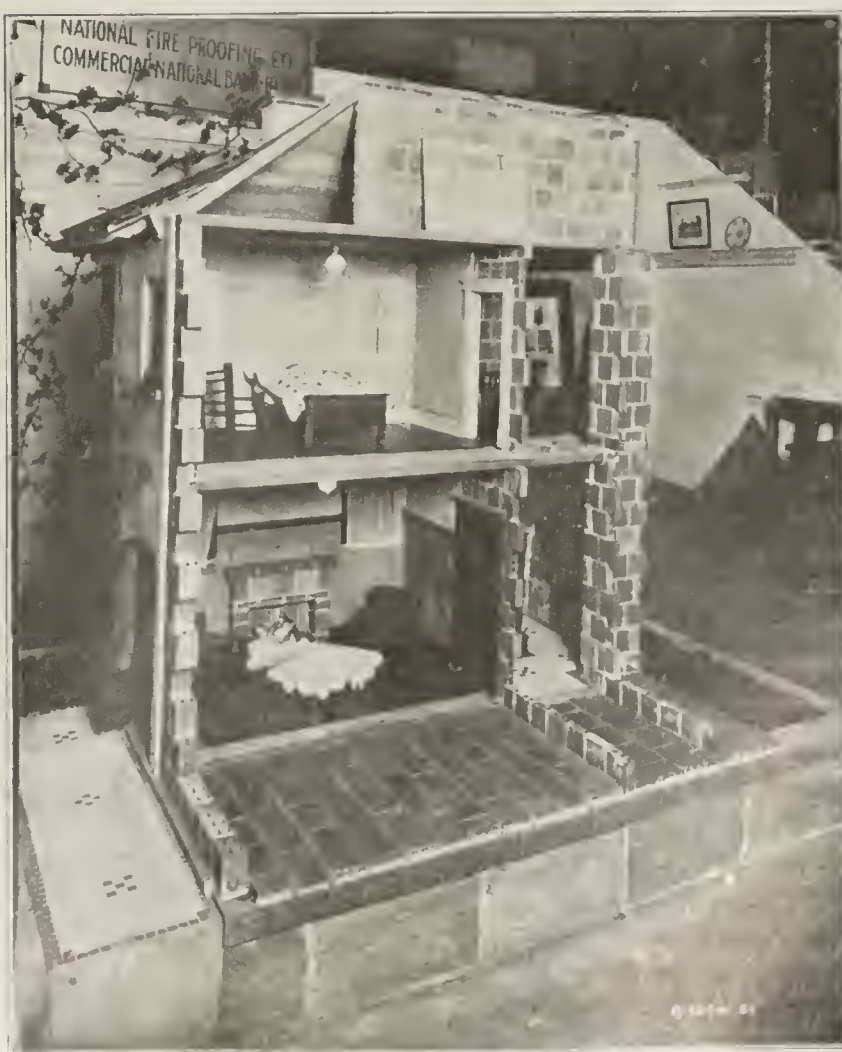
(Secretary Randall was escorted to the platform.)

ANTHONY ITTNER: Mr. President, we present to you the Secretary-Elect for installation, and the only objection I have to the man is that he is a Bull Moose.

PRESIDENT BLOOMFIELD: There are others. Ladies and gentlemen of the convention; behold your secretary. All wool and a yard wide. (Applause.)

SECRETARY RANDALL: Mr. Chairman, ladies and gentlemen: I thank you this twenty-seventh time for election to this office. It is an honor and a privilege and it carries few duties with it, so I think maybe I will be able to struggle along for another year, as I have for the previous twenty-six. It is an intensely gratifying thing to note the character of this audience, the genial as well as the intense interest manifested here. You know some of us looked upon our return to Chicago with some misgivings. It is a matter of vision. Perhaps in part sometimes our range of vision is limited.

I am reminded of the story that is told of the Irishman who, gifted with blarney—he had kissed the blarney stone—and was gifted with the gift of gab, who was trying to get a few passengers for his go-cart to go up the mountain to see the view of the surrounding scenery, which was very beautiful, and he was trying to impress upon them what a great range of vision they would have in looking over the valley. After he had taken them part way up the mountain some of them thought they would have some fun with Pat, and they said: "Pat, how far can you see," and he said, "Oh, you can see a long ways, you can see as far as Dublin, and you can see farther than that." "Can you see as far as London," they asked him, and he said, "Yes, you can see farther than that." And they said, "Can you see as far as New York?" Well, Pat didn't know where New York was, but he said, "Sure, and you can see farther than that even; in fact," he



Transverse Section of a Miniature House Built of "Natco" Fireproof Tile, Displayed by the National Fire Proofing Co., Pittsburgh, Pa.



Joint Exhibit of the Various Products of the Tiffany Enamel Brick Co., Buckeye Fire Brick & Clay Co., and the Thomas Moulding Brick Co., all Having Offices in Chicago.

said, "on a clear night you can see as far as the moon." (Laughter.)

Now, sometimes our range of vision is a little narrow but we all realize now, with the splendid spirit of this meeting and the harmony that prevails, that we did wisely and well to return to Chicago, and I am confident that this organization will realize much good for its return engagement and that, in connection with the great Clay Show which is on, and the splendid papers which we shall hear, that this, our Twenty-seventh Convention, will stand as the high record convention of this association; and I trust, when we gather a year hence, that we may bring to the convention this same spirit of cordiality, loyalty and good fellowship. I thank you. (Applause.)

Sibley is Conducted to Platform.

PRESIDENT BLOOMFIELD: I shall call upon Will Blair and Mr. Eisenhart to conduct to this platform our newly elected treasurer.

(Treasurer Sibley was escorted to the platform.)

PRESIDENT BLOOMFIELD: Ladies and gentlemen of the convention: it affords me great pleasure to introduce and call to your notice, John W. Sibley, a brother. (Applause.)

JOHN W. SIBLEY: Mr. President and ladies and gentlemen: It is indeed needless to say that I thank you for this honor that you have conferred upon me, for I am simply overwhelmed at your continued kindness, and especially at the gracious remarks of our very good friend, Anthony Ittner. His suggestion as to a sentence of life reminds me of the story that is told of the old negro mammy who went before the judge of the court down our way in Alabama and asked him if he would not pardon her husband, or her old man, who had already been in jail ten days, and the judge said to her: "Well, Mammy, what was your husband convicted of?" And she said, "Of stealing a ham." "Why," he said, "Why, no, I won't pardon that trifling scoundrel. I am surprised that you come in here and ask me to do that." And he said "What is the reason you have for asking me to pardon him out?" And she said, "Boss, me and the children need another ham." (Laughter and applause.)

While I am on my feet and enjoying your kind attention, I am going to take advantage of this opportunity in

behalf of the Clay Workers of the Birmingham, Alabama district to extend to this convention a most cordial invitation to hold your 1914 convention in Birmingham. I bring with me letters of invitation in behalf of the City of Birmingham, the Chamber of Commerce, and the Builders' Association.

I wish to add as an extra inducement for holding the convention at Birmingham, that it is a great distributing point, from which you may radiate on side trips to our beautiful city of New Orleans, or down into Florida, or over to the Chicago of the South, our neighboring city of Atlanta; and as is said in the Mayor's letter, Birmingham is a great clay working center.

Tells of City's Clay Resources.

I do not believe you will find anywhere in this country a city that has so many clay product factories so close to a large city as the city of Birmingham. We have three immense fire brick plants, and recently the Harvester and Walker people built an immense plant adjoining the new by-product coke plant of the steel corporation; we have the largest sewer pipe plant in the South; we have three fine brick plants, and we have the largest face brick plant in the South, and we have several of the finest common brick plants, and various types of clay product factories, which will be of interest to the members of this association, as will the American Ceramic Society, if they see fit to come and hold their convention in Birmingham.

Since they were there the last time the great coke by-product plant which has been built at Corey, a town built by the Steel Corporation, and the city of Birmingham does not regret that step; they believe it is a good thing for them, because they spent twenty millions of dollars there.

And there is an immense chemical plant which is not only interesting from a chemistry standpoint, but also to the manufacturer of fire proof goods that are used in the linings of the plant there.

We had a visit about six months ago from some applied chemists of Europe, touring the United States, and they spent a day in the Birmingham district and expressed themselves as having seen more of interest upon their particular branch of science in the city of Birmingham than they had in all the trips they made from Philadelphia to the Pacific Coast and back.

I hope that the Ceramic Society will conclude to meet



Attractively Arranged Display of the National Brick Co., Chicago. Note the Mantel in the Rear of the Booth.



Pergola, Composing the Exhibit of the Illinois Brick Co., Chicago.



Joint Exhibit of the Calumet Brick Co., and the Chicago Brick Co., Showing Portion of the Proposed Chicago Subway.

with us as well as the National Paving Brick Association and the N. B. M. A. and the American Face Brick Association and all the other children of this great old fraternal body. I thank you again for your kindness in re-electing me.

PRESIDENT BLOOMFIELD: Gentlemen of the convention, the time has come when I must join the two Ex's and be the third Ex, but before doing so I would like to say a few words.

During the month of January, learning that the Canadian Clay Workers were to hold a convention at Toronto, I went to that city and visited the gentlemen and was right royally received, with hospitality second to none, and in response to the invitation which I extended to them on their behalf we have here today quite a large delegation, and I am going to make a suggestion that at some time in the near future we hold a convention either in Detroit or Cleveland, or along the boundary, and send out missionaries into that country and get them to come over with us.

And I trust that those gentlemen present who are interested in the manufacture of fire brick or refractories, all after this meeting adjourns, will stay in this room. It is absolutely necessary that we have a sub-organization in that line, and now is the time to commence it.

Mr. Rogers, it gives me great pleasure to put into your hand this gavel. I know that you will hold it in honor to yourself and with justice and fairness to your brothers. (Applause.)

PRESIDENT ROGERS: We have now completed our organization for the coming year and are ready for the practical work of our organization. I will ask the Secretary to read the first part of the program.

Prof. Orton Reads First Paper.

SECRETARY RANDALL: The first paper will be "The Field of Usefulness of the National Brick Association;" Professor Edward Orton, Columbus, Ohio. (Applause.)

PRESIDENT ROGERS: Mr. Orton needs no introduction; I know you all know him as well as any member of this association.

(Prof. Orton's paper will appear in a later edition of "Brick and Clay Record.")

PRESIDENT ROGERS: I am sure we are greatly indebted to Mr. Orton for this splendid paper. It is now open for discussion and we shall be very glad to hear

from any of the gentlemen in a discussion of this paper.

W. D. RICHARDSON: While some may think of leaving the hall, I think we ought not to pass up this contribution by Professor Orton. I think it one that was very much needed at this time, and I am glad that that same thought was in the minds of others. I wrote to our secretary suggesting such a subject at this time for this reason: It has been the talk among a certain number of the members of this Association about the lobbies of the hotels in the last few years, that the N. B. M. A. was going down; that it was not of any account any more because these offshoots were doing the work, the Ceramic Society, the American Face Brick Association, and now the American Paving Brick Association, and for that reason there was nothing left for the National Brick Manufacturers' Association to do, and you, doubtless, many of you, have heard some criticisms.

Now we, who have given so many years to this Association, and have given so much thought to its interests, know that the field, the legitimate field for this Association, is still open and uncovered. We have a field of usefulness that should continue, and no one need feel, because of the establishment of these trade organizations, that the usefulness of the N. B. M. A. is being curtailed in the slightest.

The very fact, if we had done nothing else, as was pointed out by Professor Orton in his paper, than to start these organizations, would have been enough for our association to have accomplished.

Now, Professor Orton, in this paper, has left nothing for anyone to say. I have nothing to add to it, but I only want to commend it and to say that this is a paper that should be given careful consideration, and that we must not feel because there have been some people in this organization that have felt that we had passed our days of usefulness, that there is nothing left for us to do in this common organization in which we started so many years ago, and in which so many of us have taken such an interest that it seems that it is a part of our lives. It is for us to see that this organization is kept up and the interest in it kept up, and that we talk to these new people who are coming in to us of the value of this organization. (Applause.)

Penfield Endorses Orton's Paper.

PRESIDENT ROGERS: We would like to hear from some of the other gentlemen.

MR. PENFIELD: I don't like to have this question passed without giving expression to the pleasure I have had in listening to that paper. It is a review of the salient points of the history of this organization given in the best manner that I have ever heard given expression to before. I think Professor Orton ought to receive the thanks of every member of the Association for its preparation. There was particularly one feature of it he brought out at the close of his remarks that I am in hearty sympathy with, and that is in the keeping of the doors of the Association open, and working for the good of the industry at large, and for the good of our friends who are in it, and those who are not members of the Association.

I have the pleasure of being a member of another Association in a kindred line since its organization at Cincinnati some years ago, and they have chosen a different course. It has been the belief of those who have been in charge of its activities most of the time, that they held in their possession facts or so-called secrets at times that were beneficial to their members, and that if any other one were given access to those facts it should be only through acquiring a membership in that association and through paying quite a large membership fee, which from year to year has been increased.

I have spoken on the floor of that convention a number of times in the interest of the opposite method, that method which has been brought forward by Professor Orton here, and I regret to say that I have always been in the minority, and the handwriting is on the wall for that association; it is gradually dwindling in membership and in interest, and it has missed the mark of its calling; the field is there but it is not being cultivated by that association. (Applause.)

ANTHONY ITTNER: Mr. President; just a word or two. The spirit that pervades the paper that has just been read by Professor Orton, certifies to the high encomiums that I have placed upon the man; and I want to say that I endorse the sentiment, and I presume—I don't know the age of Professor Orton, but it is possible, and I don't want to throw bouquets at myself either, but it is possible that Anthony Ittner enunciated that sentiment before Professor Orton was born.

Forty-six years ago a ban, as it was known then, for that was before the word "boycott" was coined, was

placed upon Anthony Ittner and those who were associated with him because they would not submit to an arbitrary rule which would divest every one of God's own children of every privilege those children should have; because they would not consent to a limitation of apprenticeship in the line in which they were engaged, in brick laying.

The main idea is this: I did not want any privilege as an individual beyond and above that that any one of God's children was not permitted to enjoy. In that respect I wanted them all to come in on an even grade, and if I cannot hold my own on a basis of that kind I am willing to go down, and as I told my employees at that time, scrape the streets of my city for a living, and in case that was barred by closed shop unionism, that I guess the door of the poor house would not be closed against me; that, rather than subscribe to such methods, to such arbitrary, unbrotherly, unchristian methods, I would consider it an honor to spend the balance of my days in the poor house. (Applause.)

Derives Benefits from Conventions.

PRESIDENT ROGERS: Mr. Blair, one of the younger members of the organization, is recognized.

MARION W. BLAIR: Mr. Chairman and gentlemen: As one of the younger members of the organization who has only attended some six or seven meetings of this association, I wish to express an appreciation of Prof. Orton's paper, an appreciation of the educational benefits which I, and I am certain many other younger members, have derived from the meetings of this association. I will say that my object in attending this meeting is to obtain such benefits as are to be derived from such papers as Prof. Orton's. In my small position in the clay industry—I have no interest in the commercialism of the industry, it is the educational proposition that interests me, and not for a period of ten years, I want to state, have I considered or made a proposition for employment in the clay industry which has not had in it a provision that, instead of a vacation, I should be allowed to attend these meetings. (Applause.)

ANTHONY ITTNER: Mr. President, I wish to incorporate into my remarks just one word more. I want to say that my son, Warren W., is a graduate of Prof. Orton's school.

CHARLES J. DECKMAN: Mr. Chairman, I am sure



Display of a Variety of Face Brick and Tile Shown by the Pittsburg Tile Mfg. Co., of East Liverpool, O.



The Left Hand Picture Shows a Wall Built of Denison Fireproof Tile With Stucco Finish and the Right Half Shows a Thicker Wall With Brick Veneer. This Was Displayed by the Denison Fire-Proofing Co., Mason City, Ia.



John C. Boss (The Boss System),
Elkhart, Ind.



W. N. Durbin, Ex-Secretary of the
National Clay Machinery Assn.



J. O. Trautwein, Trautwein Dryer
& Eng. Co., Chicago.

that I express the supreme gratification of every one of the children of this organization when I say to you here that the members of the National Paving Brick Manufacturers' Association, one of your allied organizations, have been more greatly benefited by the co-operation and assistance of this organization than they have up to the present time had from their individual pursuits. (Applause.)

I want to say to Professor Orton that we thank him most heartily for the very able and splendid manner in which he has presented this subject for the consideration of this convention. These conventions, under such auspices as we are meeting here today, tend to amalgamate all of the interests of our industries in such a way as cannot help but be very beneficial to each and every department if we will only consider what we have and weigh carefully the arguments and the papers presented here and digest them to our own personal and actual good.

I assure you that the stimulus that this organization has given to your child, the National Paving Brick Manufacturers' Association, has been one of the greatest benefits, and it has set us to thinking along lines that meet the approval of and measure up to that standard that our industries so justly deserve, and I want to again thank Prof. Orton in behalf of our organization for this most splendid document. (Applause.)

Dunwody Pays Orton a Tribute.

PRESIDENT ROGERS: Is there any further discussion of this paper?

W. E. DUNWODY: Mr. President, I want also, as the delegate from Georgia, to add my word of appreciation for Mr. Orton's splendid paper. It is well to consider always where we are living, and what our object in life is from the splendid resume of the duties and purposes of the National Brick Manufacturers' Association, and of the results that have been attained by that body.

I think we can all decide very clearly and definitely, and without the slightest hesitation or feeling of doubt, that not only is the National Brick Manufacturers' Association's duties not contracting, but that they are broadening as the days go by; though we would do well to ad-

dress ourselves to the splendid words of duty to each other which have been so well commended to us by Mr. Orton. (Applause.)

C. A. BLOOMFIELD: I want to give you just one instance that shows Professor Orton does not indulge in words only.

I had the honor of being elected for a term of four years as one of the Committee on Technical Investigation when we only had one department of ceramics in the United States, and during those four years I was loyal, and at the expiration of my term, when the time came for re-election I said, no, that I would not take it, and Professor Orton came to me and said, "Mr. Bloomfield, I want you on that committee again, and I want you to go on." I said, "Orton, I want to do something for New Jersey, and I don't think I can be true to you and true to New Jersey, because I am going to have a school there," and he said, "I want you to go to New Jersey and do what you can, that is right, there is room enough in this country, but I want you with me on that committee," and if that does not show that what he said to-day on that platform comes from the heart I do not know what would. I have known some other instances where it has been the reverse. I tell you he is all right, and his methods are all right. (Applause.)

WILL P. BLAIR: I just want to add two or three words, and two or three words only. I subscribe heartily to everything that was said by Professor Orton in his paper as to the accomplishment, the history and the purposes of this association; but in this connection I want to say by way of warning that the purposes and objects of this association have only been initiatory; that we have simply opened the door to opportunity for this association's work in the future along the same lines, as it has pursued in the past. The door being open, it is then our duty as members of this association to walk in. (Applause.)

Calls First Session Best in History.

SECRETARY RANDALL: I think, in consideration of the hour—and I hope every one present will remain until we are through—because there are one or two announcements to be made in which you are interested—I think, Mr. Chairman, it would be well to pass the ap-



John Moroney, Chicago Brick Machinery Co.



H. R. Sykes, J. D. Fate Co.



Wm. E. Dee, President, Dee Sewer Pipe Co.

pointment of committees at this time, and take that up at tomorrow morning's session.

I want to say that in my opinion this is the best first session the association ever held; the spirit of it, and the attendance I do not think has been exceeded in any of our previous meetings, and that the National Association is not on the down grade. We have been welcomed to Chicago personally, but here is a silent welcome from Mr. Purington from Ocean Springs, Miss., that always comes.

I have been requested to announce that the Ancient Order of Chaldeans—I suppose they pronounce it "Cal-deans" because it is spelled with a "C,"—will have its first initiatory performance this evening, and those of you who are interested, and I understand they have a very large class, are requested, if they have not already done so, to see the emissary of this most ancient order during the afternoon as early as possible.

There are one or two typographical errors in the N. B. M. A. program, but they show on the face of them that they are errors. There are some little mistakes as to dates, and so forth, but the program will be carried through as given, and if there are any of you who have any doubt as to our subsequent work, if you will refer to the program I think you will see it clearly outlined.

The annual banquet occurs this year Thursday evening instead of Friday, that was the usual evening for our banquets, formerly, but I changed it.

Those of you who have not already done so can obtain tickets from the secretary, and those of you who have come in late and have not registered will have the opportunity to do so. The secretary's office is room 1102 and will be kept open all day.

Fiske Invites Members to B. B. A. Meeting.

I see J. Parker Fiske is present and he wants to make an announcement as to the Building Brick Association of America.

J. PARKER FISKE: As you know, the Building Brick Association represents the selling end of the brick business. We are going to have our first meeting this afternoon, and it is a public meeting, and every one is invited, not only the men but the ladies, and no one will

be asked to subscribe to anything, and no contribution will be taken up, so that no one need have the least fear in coming to this meeting.

I want to call particular attention to Mr. Casson, who is to address us in regard to how to sell brick. We have brought Mr. Casson here from Denver to make this address. It has been my privilege to hear Mr. Casson, and I assure you I have never heard a man who could speak more eloquently and more interestingly than he can. Wherever he goes he is attended by audiences who stand up and shout and wave handkerchiefs, and all that sort of thing, because of his keen analysis and his eloquent way of expression, and I hope that we shall have a good attendance to give him a welcome this afternoon. The meeting is at 2:30 o'clock in this room. (Applause.)

SECRETARY RANDALL: The reception and smoker this evening will be omitted, since this Order of Chaldeans has been conceived and created, and we do not wish to interfere with them. The smoker will be held probably Friday evening. Otherwise I think the program will be carried through.

The Chaldeans will meet in the room of the Auditorium Hotel across the street, and you can go through the tunnel without taking the trouble to put on your wraps to get there. They went over there because they have a large room with ante-rooms, which will serve for their secret initiation work better than anything in this hotel. I presume there will be provided a corps of surgeons and doctors necessary to take care of the injured should anything unfortunate happen. (Laughter.)

A MEMBER: A number of our friends are making inquiries as to whether this Order of Chaldeans has any relation to the Order of Bull Moose that was organized last fall.

ANTHONY ITTNER: That is a very proper inquiry.

SECRETARY RANDALL: I will answer that by saying that I think the only connection is in the insignia of this ancient order, and that is the bull itself.

PRESIDENT ROGERS: The next session of this organization will convene at 9:30 o'clock tomorrow morning. We will now stand adjourned.

Whereupon an adjournment was taken until 9:30 o'clock a. m. Thursday, March 6, 1913.



C. W. Raymond, V.-Pres. C. W. Raymond Co.



L. E. Rodgers, Rodgers Eng. Co., Chi.



Chas. Stevenson, Wellsville, Ohio.

THURSDAY, MARCH 6.

The second day of the convention was called to order by President W. H. Rogers at 9:30 a. m. Thursday.

PRESIDENT ROGERS: Gentlemen, our Secretary will announce the first paper on the program, which is No. 2.

SECRETARY RANDALL: Number 2 is the first of our regular program, and it is our intention to follow the program literally as nearly as possible.

I think this is a paper in which you will all find deep interest, and much subsequent value. "Our National Fire Waste, Its Cause and Remedy," by Mr. Doyle. Mr. Doyle, however, was unavoidably called from the city, but Mr. Ernest Palmer of the National Fire Underwriters' Association is with us, and will present us a paper on that subject.

Mr. Palmer said:

In early Biblical history you will recall that a certain man destined to be one of the greatest leaders of all time was guarding the flocks of Jericho on the edge of the desert when he was startled by a burning bush.

He was startled because he could not account for fire in that place and under those circumstances. No other human being was within sound of his voice, and, although it was in Egypt, it was before the time of the Egyptian cigarette and the careless disposition of the cigarette stub. Furthermore he had not been careless with matches.

But the fire itself—the burning bush—did not make such a profound impression upon him as the singular fact that the bush burned without being consumed, and we are told that from the burning bush Moses received his first instructions to fit him for his great task of leading the people of Israel out of bondage.

The voice of God in that instance came from a burning bush which was not consumed.

Are you disposed this morning to realize that the American people are today in bondage to a spirit of carelessness, extravagance and indifference, and that this bondage is proving harder to shake off than the bondage under which the ancient Israelites labored in Egypt? Are you disposed this morning to read the voice of prophecy in the great annual fire waste of this country? Are you disposed to heed this voice which speaks to you not through a burning bush which is not consumed, but rather through the smoke and ashes of thousands of buildings and homes which are consumed.

After all, perhaps it is the voice of God if we would but heed it. It should speak to us also through the thousands of human lives which are needlessly sacrificed every year to this red plague. The silent lips of these victims should speak with an eloquence more compelling than any you will hear from this platform today.

Fire has been a word to conjure with from the beginning of the world. It is one of the great mysteries of nature. We

find in history and in the literature of all peoples numerous instances of its use by the gods, both to punish and to benefit mankind.

We know that in our present day civilization it appears to be man's willing slave, but we are now to discuss for a few moments the cases where it has proved to be man's vengeful master.

Analyzes Annual Fire Waste.

The National fire waste is so tremendous that we can almost imagine it leaves a trail of sparks and cinders across the heavens as our old world wanders on its way, perhaps deceiving the people of Mars into the belief that a new comet is amongst them.

But let us leave the figures of speech for a while, and backed up by the cold figures of reliable statistics let us look, first, at the national fire waste as it actually exists; then, second, analyze for a few moments the causes and effects of this situation, and finally let us venture a few suggestions as to a remedy.

Now, what are the conditions? Take one phase of the problem.

Our fire departments are the wonder of the world, both in the matter of equipment and in the skill of the men who operate them.

(The stenographic report of the N. B. M. A. Convention will be completed in the April 1 number of "Brick and Clay Record.")



Mrs. O'Leary's Barn Containing a Lineal Descendant of the Famous Cow Which Kicked Over the Lamp Causing the Fire of 1871. Exhibit of the Fire Prevention Bureau of Chicago.

SOCIAL CLIMAX TO THE N. B. M. A. CONVENTION—THE ANNUAL BANQUET AT THE CONGRESS HOTEL



BANQUET
OF THE
27th Annual Convention
National Beekeepers' Association
at the U.S. Congress Hotel
March 6, 1913

BACHELOR AND BENEDICT WIN HOUSES.

Lucky Man in Clay Show Guessing Contest Hits Exact Number of Marbles in Jar.

John Mulligan, 400 Webster Ave., Chicago, a bachelor, and Daniel Moloney, 1219 South Troy St., Chicago, a married man with a family of seven children, won the



Mr. and Mrs. Daniel Moloney, Winner of Examiner Prize in Popularity Contest for Workman's Brick House Shown at Clay Product Exposition.

two prize workman's \$2,000 brick houses erected at the Coliseum during the Clay Show and given away in contests.

The house that Mulligan won was in the guessing contest conducted by the exposition company, the winner guessing the exact number of marbles in a glass jar, there being 5,377 by actual count.

Moloney obtained his house and \$1,000 lot in a popular voting contest conducted by the Chicago Examiner, he receiving 2,766,280 votes.

Both houses will be constructed in exact duplicate of the one shown at the Coliseum as soon as the winners make a choice of the \$1,000 lots which go with the prize homes.

MACHINERY ASSOCIATION PLANS.

Drennan is Elected President and Sachs Secretary, vice W. N. Durbin, Resigned.

There was no meeting of the National Clay Machinery Association Friday as was anticipated by some of the men in the trade. The big annual meeting that was held by



John Mulligan, Winner of the \$2,000 Prize House at Clay Show Given Away by the Clay Product Exposition Co.

the association last Wednesday was the only occasion during the convention and clay show that the representatives of this branch of the brick industry came together en masse.

George B. Drennan, the recently elected president of the organization said that a session of the association would probably be held in about two months from date in one of the eastern cities.

W. H. Sachs, of the Manufacturers' Equipment Co., is the new secretary.



Right Hand Wall of the Bricklayers and Masons International Union of America Exhibit, Showing High Class Paneling Effect.



Side Wall of the Bricklayers and Masons International Union of America Booth, Showing Various Fancy Methods of Laying Brick.

FISKE QUILTS AS SECRETARY OF B. B. A.

(Continued from Page 334.)

to become resigned to them. If only they were arranged in groups, an avenue lined with them might attain an effect of fantastic beauty. But no; they rise up here and there as though by chance, alternating with normal, and even in some cases with low buildings; and consequently they seem like houses that have caught a strange disease of overgrowth and madly soar to distorted heights. And what disconcerts me, accustomed as I am to cities of stone, as in France, of cities of wood, as in the Orient, is to see nothing but steel, reinforced concrete, fiery-red brick, and, above all, a sort of red brown composition (evidently terra cotta) which makes houses and even churches and steeples look as though they were made of chocolate. Here on Fifth avenue, which is, as everyone knows, the millionaires' quarters, is the Vanderbilt residence, built in pure medieval style and of real stone. It would look well in a park under old oak trees; but a neighboring skyscraper overhangs it and crushes it. Here is a Gothic cathedral capable of rivaling our own; but the skyscrapers beside it reach higher than its tapering spires, so that it is belittled to the point of seeming a mere Nuremberg toy.

I do not intend to speak disparagingly of terra cotta. But why always that same colorless varnish glaze? Why not color? Why not brick and terra cotta? It is not the question of cost; it is thoughtless copying and following the leader. Other colors can be cleaned down as well as white and they retain color value when the dirty white front is nothing but a smudge.

Recent department store buildings in German cities put our efforts in this field to shame.

A conversation had between a number of gentlemen of your association and Mr. Charles Mulligan, the sculptor, who is at the head of the modeling class that has an exhibit in your Clay Products Show, comes to mind here. We were in the Coliseum last Wednesday and met Mr. Mulligan, and the conversation went on, one thing followed another, and finally he said: "In 1911 I was abroad with Mr. I. K. Pond"—Mr. Pond is a prominent architect of this city—I am quoting Mr. Mulligan—"we were at the International Convention of Architects in Rome and met a great many German architects there. Later we went to Germany and met some of them there again and in talking of their work and their materials for building, some of them expressed this thought: 'If we only had the materials to work with that you in America have, what wouldn't we do?' " And the idea was advanced that if your Association before its next exhibition would take your products and send samples of these brick and say, perhaps, terra cotta, if they want to have that for trimming abroad, to the Association of Architects in Berlin or in other cities, it does not make so much difference about Berlin, but I was thinking of Berlin because that is the capital—let them see what you have to work with and institute a competition among them for a bungalow or a colonnade or something of that sort for your next Clay Products Exposition, it will be intensely interesting and it will open the eyes of practitioners in this country and we might all be willing to learn something. (Applause.)

Governor Wilson, in bidding his friends and neighbors at Princeton good-bye the other day, said: "You cannot love a

country abstractly, you have to love it concretely. You have got to know people in order to love them. You have got to feel as they do in order to have sympathy with them, and any man would be a very poor public servant who did not regard himself as a part of the public."

Read architect for "you" and architecture for "country" and the administration rings just as true. How few of our buildings grow upon you, appeal to you upon closer acquaintance?

It is because most of them are created as strictly business propositions. When the designer becomes absorbed in the building he is creating, puts love and care into it, frightful inconsistencies will cease, and harmony, proportion and right use of materials will prevail.

It has been said that brick is a democratic building material in contradistinction to stone and marble which have been called aristocratic.

We live in a democracy. Yesterday there was inducted into office at Washington a new president of the democratic party, and you, gentlemen, are having an exhibition of democratic building material at the Coliseum and a convention in Chicago.

We may not agree with M. Loti, in all he says, nor do I think him accurate in his reference to precedent. Good red well-burned brick is certainly an excellent building material. Even M. Loti's beloved Chateau de Blois contains some splendid red brick work in the Louis XII wing. But he is right about the high raw bare side walls overhanging lower structures with nothing to relieve them but a screaming electric or painted sign at the top. The electric sign may be attractive by night—but by day, anything but architectural. It is these walls that should challenge the skill of the architect.

I know in lower New York there are examples where the designer has had a line wall to cope with, where he could have no projections. In a number of instances he has done extremely well in handling that wall, crowning it by the use of color in the brick work, carrying around this facade where he has projections on the side walls where he has none, and the sky line has been relieved; but you take it the country over and very little effort has been put on that problem. Right here in Chicago we have lots of instances, we have many high buildings towering above low buildings that make our sky line extremely ragged, dirty and bad. I think all of you who are familiar with Chicago will bear me out in this, and it does not apply to Chicago alone. I think it applies to the country at large. There, gentlemen, is a view for your information, for the active brick man to put the owner and his designing architect to shame.

These instances are referred to so that when examples of successful handling of these architectural problems appear (and the material here used is almost invariably brick) that you take them by photography, have them reproduced, possibly in color, and send them broadcast among architects. The architect, I fear, is often lacking in courage—the courage necessary to insist upon his own letting him carry out the plans that his conviction tells him would not alone improve his building, but would redound to the benefit of the neighborhood.

In this connection I think of a story recently told by a man



Garden Wall, Showing Various Methods of Laying Brick in Fancy Designs, in the New York and New England Exhibit.



Splendid Showing of the "Bradford Reds" and "Ruffs" Made by the Bradford Press Brick Co., Bradford, Pa.



General View of Display made by the W. S. Dickey Clay Mfg. Co., Kansas City, Mo.



Replica of Faience Panel Furnished by the Los Angeles Press Brick Co., for Utah Hotel, Salt Lake City.

from Boston—the late Bishop Brooks was returning from one of his annual trips to Europe and had just arrived in port in Boston and was standing on the dock while the customs officer was opening his baggage and seeing whether there was anything dutiable in his valises or trunks. Beside the Bishop were some of his parishioners who had come to the dock to welcome him home. Said one of his parishioners: "Well, Bishop, I suppose you have brought some new religions back with you to Boston." They all looked at the customs officer who was rummaging through the baggage, and the Bishop said to him: "I never bring back with me any religions with duties." (Laughter.)

Wants to Stiffen Architect's Backbone.

The architect owes the community that much. He owes this duty to the public. Now, you can help stiffen his back-bone in this case through publicity of the best examples. Rest assured, the timid man will seize such precedent, for precedent is what he always falls back on. Timidity and lack of independent thought is the curse of the designing architect in America today. With serious and open-minded application, grounded in, though unhampered by precedent, the architect should not produce such structures as our recent department store buildings. Look at State street in this city. With perhaps one exception, what are they? Barren expanses of expressionless terra cotta and plate glass—engineering boxes, steel enclosed in fireproofing to comply with the ordinances and rules of the fire underwriters and faced on the exterior with what looks for all the world like castile soap.

All this bodes well for brick in this country for at least four years. I wish you every success in your endeavors. (Great applause.)

Casson Tells Members How to Sell Brick.

PRESIDENT SIMPKINS: I am sure it has been a pleasure to us all to be told how brick material should be used. We also have with us this afternoon a man who has made efficiency his life study. I take pleasure in introducing Mr. Casson, who will tell us "How to Sell Brick." (Applause.)

(Mr. Casson, being introduced, said:)

Mr. Chairman and dear friends: I assure you it is very much in harmony with my inclinations and with my nationality to say a few words this afternoon about this piece of Irish confetti. (Laughter.) President Wilson assures us we must love

our country concretely. Why not brickly, too, as well as concretely? The word concrete is used too often. (Laughter.)

Working in clay, so far as we can make out, is the oldest thing known. The first work ever done was in clay, wasn't it? (Laughter.) And when the great Potter, whose will planned out the human race, when He made man of clay, that first man was nothing but clay, and the great Potter breathed into him the breath of life and he became a man.

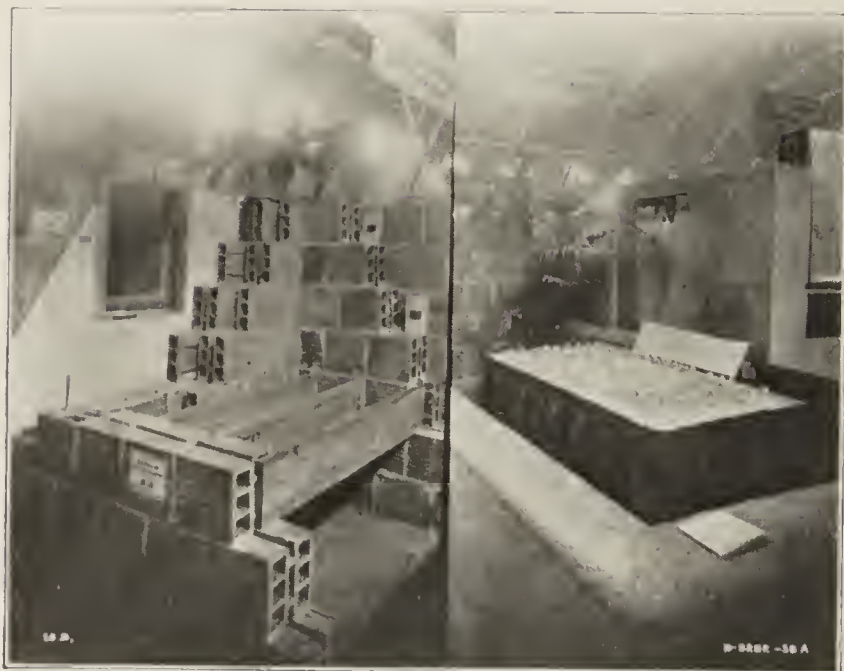
Now, gentlemen, you are makers of clay brick. Perhaps you can do more than that. Perhaps you can breathe the breath of life into your brick. Why not? Make your brick business alive, instead of taking it for granted as an old thing, a stale thing, a thing about which nothing new is to be said. If you appreciate your own business, you will talk it to the public. Brick! What could be said of brick? There are old men here, but they are too young to know what brick means yet.

Sometimes it does us good to look into our own business. New things are coming up. We are living on new things. You cannot live on last year's breath. Sometimes we try it. The question is whether you are a person or a habit. (Laughter.) Sometimes you know you see a man, you think he is a man. He used to be, now he is a habit. He is doing this year what he did last year. Somebody taught him a little long ago, and he has been hanging onto that little ever since, afraid to let that go. He don't dare let that go to get any more, for fear he will lose that.

Now, that is the way with our business. Experience alone is not enough. Perhaps the man who taught you did not know it. I know that is the way with carpenters. Who taught them to carp? (Laughter.) A carpenter who learned his business from somebody who knew how, you could put him in a museum and charge ten cents. (Laughter.) You know if a plumber makes a mistake he charges twice for it, and if a doctor makes a mistake he buries it; and if an electrical engineer makes a mistake, he blames it on the induction, because he doesn't know what that means and neither does anybody else. (Laughter.) If a preacher makes a mistake nobody knows the difference, but when a carpenter makes a mistake it is just what he expected (laughter), because he never learned how. First he began to carry lumber, then he began to hold nails and bye and bye they were short a man and somebody told him to hammer, and he began to hammer, and the next day he was out for a job as a carpenter. That is the way carpenters carp, and that is the way plumbers plumb, and you never know anything until you learn. We have to study everything.

Says Stagnation in Business Means Ruin.

Your business is bound to grow stale unless you freshen it up. You can grow just as stale as a pool of green water in a woods.



The Left Hand Photo Shows a Section of a Wall Built of Fireproofing Made by the Denison Fireproofing Co., Mason City, Iowa. The Right Hand Picture Shows a Clay Model in Relief of Thirty-four Residences that are to be Built of Denison Fireproofing in Winnetka, Ill.



One Side of the Interesting Display of the W. S. Dickey Clay Products Mfg. Co., Kansas City, Mo.

Unless you freshen up your business you can grow stale like that. Unless people know about it, get excited about it, your trade grows stale and the profit grows less, and the foolish people do everything but learn. They cut prices and cut prices, and bye and bye they cut themselves out of business, and that is the way your brick business goes, unless we freshen it up. It is not enough just to hustle, to have energy, to fly around in the old way. The thing is to find the right way to fly around. It is not how much money you take in, but how much have you left? Years ago we used to take in 50 cents and keep 10 cents. Now we take in a dollar and we pay out 98 cents, so it is not what you take in that helps you; it is what you have left. We used to estimate our gross business, but the gross don't cut any figure any more. The net is the thing we figure on today, and that little word "n-e-t" is the biggest thing in the business world. When you count up what you have left and there is nothing in the bank, you are like the sailor with the wooden leg who had a jag on, and his wooden leg got stuck in the sidewalk, and he walked around himself all night. What was the good of it? (Laughter.)

You make money with what is inside the head, not what comes out. The sweat that comes out of your brain indicates that there is not much in there but water. (Laughter.) You have got to do things with your brain. This is the 20th century. There are some businesses that began a thousand years ago and they are there yet. What business have they in 1913? They have not got up to 1913. They are somewhere in the 8th century. The thing is to catch up by going at it in an intelligent way. It is possible to bring your knowledge into business. Not being a brickmaker nor a bricklayer, nor a brick buyer, it seems to me it is possible to point out two or three things.

I was riding from Chicago the other day with a manufacturer, and he stated to me his opinion of efficiency experts and all such people, and he said: "No man can come in and teach me my own business. I know my business. I have grown up with my business. I created my business, and no efficiency expert can teach me."

I let him go along, because having been a salesman long ago. I knew that every man has a grouch, and the way to get along with him is to listen to his grouch, and so I listened to his grouch for half an hour, and then I had a mortgage on him at 10 per cent and I began to foreclose. (Laughter.) I said: "Now, I happen to be one of those professional outsiders who are supposed to teach people their business, and I will bet you the dinner that in ten minutes I will tell you something about your business that will make you money." He said: "Go ahead. I make go-carts." That was rather difficult, because I had never bought a go-cart nor pushed a go-cart. (Laughter.) At first it was somewhat disconcerting. I never had had anything to do with those collapsible contrivances for infants. So I thought at once of all the plain straight facts I could about the business, and I said to him: "Whom do you sell your go-carts to, men or women?" "I sell them to women." "Did you ever ask any woman how she wanted a go-cart made?" "No." I said: "Women have trouble folding your go-carts. A woman can only fold a scissors. If it is a three-part mechanism she cannot fold it. No woman can fold a camp chair, and you have got to make your go-cart fold like a scissors." (Laughter.) I said: "Who rides in your go-carts? Grandfathers?"

"No, babies."

"What do babies do?"

"Two things: just holler and look and look and holler."

"That is all a baby can do for a living," I replied. "If you

simply put on a red tassel, make it red, make it bright, it will cost you say thirty cents, and you sell it for sixty cents, and the mother brings in the baby, the baby sees the red thing and the baby says, 'Goo, goo,' and the mother buys the go-cart." (Laughter.) He said, "Come to dinner." (Laughter.)

That was two years ago, and if you go in any store in Chicago you will find the go-cart. You can tell it by the red thing on the front. (Laughter.)

Wants Business Men to Learn Their Surroundings.

Now, that thing can be done very easily. You ask the average man who has a store where the middle of his store is and he does not know. He will take you half way back in the store and say that that is the middle, half way between the middle and the front. That is not true. The middle of the store is at the front door, because you pay half rent for the windows. The people who go by the store don't spend any money.

You see it is possible not to know your own surroundings, and the greatest changes that have been made in business have been made from the outside rather than from the inside.

For instance, if there is a doctor here, he knows very well



H. J. Flood, President, Chisholm, Boyd & White Co.



Variety of Styles in Bricklaying, Shown in the Exhibit of the Bricklayers and Masons' International Union of America.



"Brick & Clay Record's" Booth, Where Members of the Clan Congregated to Talk and Rest. The Columns Were Composed of Sewer Pipe Made by the Robinson Clay Products Co., Akron, O., Represented in Chicago by the N. A. Williams Co.

Pasteur was not a doctor, the man who founded medical science as we have it today. If there is a Presbyterian here, he knows that Calvin was not an ordained minister. Harriman was not a railroad man, Carnegie was not a steel man, Gary is not a steel man, Ingersoll was not a watchmaker, Morse was not an electrician, Bell was a professor of elocution, Garibaldi was an outsider in Italy, Napoleon was an outsider in France, Cromwell was an outsider in England, Christopher Columbus was trained, not to be a sailor, but to be a comber of wool. (Applause.) And so every great business has been changed from the outside as well as from the inside.

I just came from St. Louis. I made a speech in St. Louis, and if there are any of you here who were not there yesterday, I will tell you what I told them in St. Louis yesterday. I said: "The great trouble with St. Louis has been that ancient slogan, 'Show Me.' If there was ever a foolish slogan that is it, 'Show Me.'"

You know there was a time when St. Louis was neck and neck with Chicago, and then somebody cursed that slogan onto St. Louis, "Show Me," and St. Louis sat back and said "Show Me," and Chicago showed her. (Laughter.)

Los Angeles is showing her, Seattle is showing her, and she has slid back from being the fourth city until she is the seventh city, sitting back there saying "Show me." That "Show me" has cost St. Louis hundreds of millions of dollars. It lost the St. Louis farm machinery business to Chicago, and the Burroughs Adding Machine business went to Detroit. Business after business went, and St. Louis sat down drinking beer and said "Show me" and lost it. (Laughter.) So I gave them a new motto down there yesterday. I said: "Instead of this old 'show me,' I will give you a new slogan: 'St. Louis leads!' M. O. means 'Move on.'" (Laughter.) I am going to change their slogan.

It is not enough to make brick. College professors will talk very learnedly about brick in the abstract, and they will tell you that here is demand and here is supply, those eternal forces of demand and supply. What in the world is demand? Demand is the rabbit and I am the fox. (Laughter.) And I find that instead of being able to sit down and have little demand come up to me, demand is taking to the woods and I have to go after demand. I have to go after demand or else somebody else gets it. That is the tragedy of business. Somebody gets after your rabbit before you get it. (Laughter.) They see the rabbit first.

Years and years ago you sat back and said, "Wood is cheap; wood is cheap." Wood began to climb. You had a nice little story "Wood is cheap; wood is cheap," but you said it twenty years too long. Wood is cheap; wood is cheap, and all the while wood is coming up, coming up, and all of a sudden wood got too high and there was your rabbit gone, and now you have to get after demand again. It does not come to you.

It is not a question of MAKING brick. The thing is to sell brick. The thing is to display brick in such a way that everybody wants it. Now, what can you do with advertising? You can do this with advertising. Advertising does to people what branding used to do to cattle. It puts the mark on. The aim of advertising is to make a demand. For instance, suppose I am advertising Brown's razor, and I keep on advertising "Brown's razor, you can shave smoothly"; "Brown's razor, you cannot cut your throat"; "Brown's razor, you cannot commit suicide with

it"; until I get everybody thinking about "Brown's razor," and bye and bye a man goes into a hardware store and what does he say? He wants Brown's razor; he is branded, I have my mark on him. (Laughter.)

You ought to advertise in this way, so that when a man wants to build a house and starts out to see his architect and contractor, you have your mark on him. He does not go and have to make up his mind. You know the hardest thing we have to do is to make up our minds. That is why we marry. (Laughter.) There are only two things that make up a man's mind, his wife and an advertisement. So we make up a man's mind. A man goes into a store for the purpose of purchasing a certain article. He asks for a pair of shoes, and the man puts seven pair of shoes in front of him, and what does he do? He says he will cail again, because he has to consult his wife. You have paralyzed him by showing him too much. Keep advertising until you have a man come in and say, "I want a pair of Regal's," and you have got him.

We make national habits. You see we are animal trainers. We train the animals; we teach them their tricks. We taught them to use nice bath tubs instead of going out in the rain. (Laughter.) All these fine, nice, clean habits we put out on the people by advertising.

Suppose you were from a far away city and you were wandering around here in this great vast wilderness of Chicago, and suddenly you turned a corner and ran across a man whom you knew slightly at home. "Why, hello Bill." Aren't you tickled to death to see him? You would lend him money; you invite him to dinner. You did not think much of him at home, but he is an old familiar face, and you are glad to see him. That is the way we do in advertising a product. Every time you see an advertised thing you will say: "Why, hello Bill." The thing that you hear spoken about, that is the thing you want.

Points Out Economy of Advertising.

You know historians make people famous a hundred years after they are dead. We make them famous right here and now. That is the difference between us and historians. We work while you sleep and work while you live. You don't have to die. Get your monument first, put your monument up while you are alive, and you can see your own fame and glory; that is what the advertising man does.

Advertising enables you to save half of your sales force, because the salesmen don't have to explain who you are. The people know who you are because they have seen your name so often. An advertising man is just like a retriever. If you go hunting and have not got a dog with you, you have to scare up your own birds. That is what the advertising man does. He scares up the birds for you, he is not an expense, he is a saver. You had better buy a dog. (Laughter.)

It is not the manufacturing cost which makes goods valuable. What is the value of Grant's tomb? Who could tell the value of Grant's tomb? Suppose all the navies of the world came up and sailed across to the mouth of the Hudson river and said: "We want Grant's tomb." Every able bodied man, every old, decrepit cripple, would come from San Francisco and the whole United States, and would say: "We won't let Grant's tomb go, not because of what it is built of, but because it represents the

(Continued on Page 382.)

EDITORIAL SECTION

Volume XLII. CHICAGO, MARCH 15, 1913 Number 6.

1913 CONVENTION BREAKS RECORDS FOR HARMONY.

successful and the most harmonious ever held in the history of the clay industry.

It is true that the Exposition has only one precedent to make comparisons with, but the N. B. M. A. has twenty-six, and no less authorities than retiring President Bloomfield, the newly elected President Rogers, and the long-faithful Secretary, Theodore Randall, are quoted as saying that the 1913 Convention will go down in the records of the organization as the most pleasing, the most harmonious and the most profitable of all.

To those of us in Chicago this is indeed gratifying, for we here, who participated in the turbulent sessions of 1912, realized that it was with many misgivings the Executive Committee yielded to the plea of the Exposition management and, breaking all precedent, gave Chicago the second consecutive convention.

The N. B. M. A. had been assured that whatever differences there may have existed in 1912 were to be considered as a closed chapter and the incidents of Convention week **PROVED** that this assurance had not been made without faith.

There may have been a time when a dissension in the ranks such as was witnessed last year, might have been lasting in its effect, but a **NEW ERA HAS DAWNED** in the clay industry and the spirit of the "Get-together Fever" permeates everywhere.

Differences have always existed in even the smallest and best regulated family and they will continue to exist. The same is true of a great organization like the N. B. M. A., but this does not signify that the **MINORITY** shall not bow to the **MAJORITY** or that old scores shall not be healed that we may work with a **UNITY** of purpose for the common good.

Burned clay is coming into its own—thanks to such commendable enterprises as the Clay Products Exposition and the activity of the various up-lifting organizations in the industry, and there is no time

The Second Annual Clay Show and the Twenty-seventh Annual Convention of the National Brick Manufacturers' Association, with the slated meetings of the kindred organizations, are a thing of the past. It has been said that both great enterprises—the Show and the Conventions, covering a period of eleven days, were the most suc-

cessful and the most harmonious ever held in the history of the clay industry. We must be **CONSTRUCTIVE**—not **DESTRUCTIVE**. We must **BUILD** not **TEAR DOWN**.

Petty politics has no place in our ranks. **SELFISHNESS** must be submerged and **GENEROSITY** pushed forward, if we would do anything for the general good of the industry.

Now, that we have locked hands in **GOODFELLOWSHIP** and smoked the pipe of peace, let us **CONTINUE** that way, for it is only with **UNITY** of purpose and **UNITY** of action that we may accomplish things.

There is a great year **BEFORE** us. Many thousand buildings are to be erected. Many thousand miles of sewers and drains are to be laid. It is up to every clayworker, however small he may be in the contributing end of the industry, to see that **BURNED CLAY IS THE MATERIAL THAT IS SELECTED**.

There is no surer way to accomplish this than through concerted action. Let us extend the circle of good fellowship formed at the 1913 Convention until it encircles the Nation.

BOOST CEMENT DURING CLAY SHOW.

to **SELL** his products.

This knowledge, it has been argued, alone has bolstered up an **INFERIOR** product and given it a high position in the building and construction work of the Nation.

The cement manufacturer realizes the advantage of **PUBLICITY** and he never loses an opportunity to **LET THE PEOPLE KNOW** what he makes.

Take, for instance, Convention week.

Frequent reference has been made in "Brick and Clay Record" to the cement manufacturer as a live wire who knows how

The clay products people are very much in the public's eye because of the Exposition at the Coliseum and the various annual conventions that are being held.

What does the cement man do? Sit down and fold his hands while the clayworker reaps the harvest?

Not much. He turns to his publicity manager and says: "Get busy!"

And the P. M. gets busy forthwith.

Take the Sunday Chicago papers. Nearly every one of them printed more or less about concrete to its advantage.

The P. M. even got a four-column picture of four-

recently constructed factory structures and held them up as **IDEAL** for the purpose.

Some of the papers actually carried more concrete boosts than they did boosts for clay products!

And this in the face of the fact that the greatest industrial show that ever was held anywhere is being conducted at the Coliseum in the **SAME** city in which these papers are printed!



AN ENCOURAGING SIGN OF THE TIMES.

One of the most encouraging features about the 1913 N. B. M. A. Convention was the appearance on the Convention floor of a representative from the Bricklayers', Masons' and Plasterers' International Union. And a still more encouraging feature was that the Union official delivered an address in which he pledged the unqualified support of his organization in the work to further the interests of the clay product industry.

Vice-President Preece was the official and he did more to remove the feeling of distrust and suspicion existing among the brickmakers for the bricklayer than tons of printer's ink could do.

With a **UNITED** industry—the clayworker and the bricklayer hand-in-hand, both branches pulling together for a common cause, **SOMETHING IS GOING TO HAPPEN** in the not far-away future.

Fan this spark of goodfellowship offered you, Clayworkers. Encourage the bricklayer to work **WITH** you, instead of **AGAINST** you.



WHY SOME NEVER PROGRESS.

Some persons will not seize Opportunity even when it thrusts itself right under their noses. One tilemaker out in Iowa, according to Delegate Maury at the recent Iowa State Convention, proves this.

It seems this particular tilemaker lives in a community where there is—or rather there was thought to be, no clay suitable for brickmaking, and especially paving brick.

Whether it was because of this lack of **SUITABLE PAVING MATERIAL** nearby or a lack of **CIVIC PRIDE** among the residents of the little town, it is a fact that there is not a paved street in the place.

This being true the streets are in a pretty bad condition certain seasons of the year and hauling is a task both for beast and man.

Now, it so happens our enterprising tilemaker found a certain road that led from his plant to the village a little worse than any other and a particular spot or crossing almost impassable for either pedestrian or team.

It occurred to him that a brick crossing would help materially, but he had no clay or shale suitable for

brick and there were no brick. One day, in sheer desperation, he scraped up some top earth and moulded it into brick. He baked them and laid them.

That was many years ago. That brick crossing has withstood the pounding of the teams and wagons all this time and it is in a remarkably good condition today.

To make the story end right we ought to be able to say that this little incident **LED** the tilemaker into making paving block—a material that is sadly lacking in his own town and in pretty much all of Iowa —

But, strange to say, such is **NOT** the case and the tilemaker is **STILL MAKING TILE** and his town is **STILL WITHOUT BRICK**.

Which leads us to remark that it is no wonder some people never progress.



BOOST 'FRISCO FOR 1915 SHOW OF CLAY.

There is a movement on foot to skip a year in the holding of the Clay Products Expositions and, conserving our resources, concentrate our efforts, our energies and our capital in one mighty display of clay products in a permanent exhibit at the Panama Exposition to be held in San Francisco in 1915.

The proposition met with favor at the N. B. M. A. and other conventions held in this city early this month. Many speakers urged it as a **FEASIBLE, LOGICAL** and **PROFITABLE** one. Many delegates discussed it in the hotel lobbies and on the Convention floor.

There seemed to be absolute unity of thought on the proposed exhibit and there is little doubt but what the germ planted **WILL GROW** into a practical working plan and that before many weeks some tangible suggestion will have been arrived at and the initiatory step taken.

It is a **GREAT** undertaking—this proposed exhibit, but one that is **POSSIBLE** if clayworkers everywhere will put their shoulders to the wheel and **PUSH**. Let us push.



If every clay product manufacturer in the country turned his attention to **CREATING A LOCAL DEMAND** by advertising in his home paper the concrete scare would be a thing of the past.



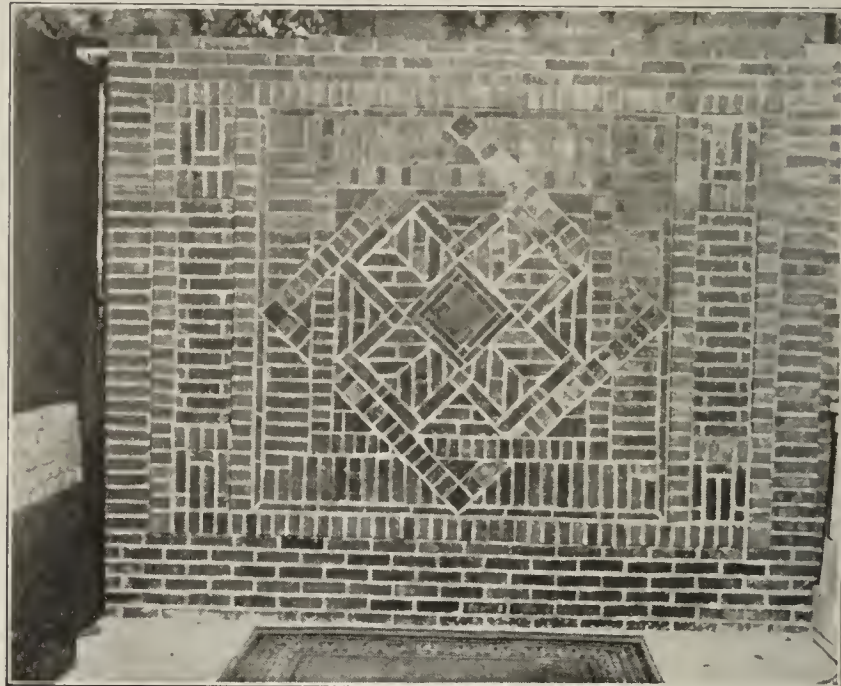
Did you ever stop to think that in the average small town the contractor that **PLANS** the buildings is a **CARPENTER**? And being a carpenter is it not natural that he sees that **LUMBER** and **NOT BRICK** go into the structures he plans? Why not educate your bricklayer to become the village contractor and do the planning?

DECKMAN AND BLAIR HEAD PAVING BRICK ASSOCIATION

(Continued from Page 341.)



Four-Foot Section of a Chimney, Showing Method of Construction Used by the Alphons Custodius Chimney Const. Co., Chicago.



Beautiful Ten-Foot Square Face Brick Panel, Shown by the Marion Brick Co., Montezuma, Ind.

such modified regulation for raising revenue, unless it may be deemed advisable to defer action on such report until 1914.

I would further recommend that a blank be prepared and furnished our members upon which to report annually, at a given date, the total number of square yards of material sold by them during the preceding year, and that this information be compiled for use in advertising purposes, and I am sure that, if this recommendation should prevail, our industry will have the proud distinction of showing the largest increased yardage during the next year, as compared to our published statistics of the past, of any type of paving material in use, and for once we can be honest with ourselves without fear of results.

In conclusion, I personally desire to say that no official act of mine has been performed in any manner other than with fairness to all our membership, and I have no regrets to offer to you for my part as an officer of the Association. I feel that the policy of your officers, the office committee, and others especially entrusted to transact business for the Association has been in the best interests of all and that no individual or member has endeavored to force any policy or thing on the Association that might savor of selfishness or personal advantage, but that our membership has been harmonious and I believe prosperous, and that we may continue in our loyalty and earnest support of the Association is my fondest hope.

The National Paving Brick Manufacturers' Association at the close of the session on Tuesday, announced the appointment of the following committees:

Executive Committee—J. G. Barbour, Chairman, Canton, Ohio; C. P. Mayer, Bridgeville, Pa.; J. W. Hall, Baltimore, Md.; C. C. Blair, Youngstown, O.; J. B. Hammond, Bolivar, Pa.; J. D. Wilcox, Alliance, O.; O. M. Townsend, Zanesville, O.

Advertising Committee—C. C. Blair, G. O. French, Canton, O.; H. C. Adams, Danville, Ill.; D. Warren DeRosay, Corry, Pa.; H. H. MacDonald, Cleveland, O.

Office Committee—C. J. Deckman, Cleveland, O.; J. G. Barbour, C. C. Blair.

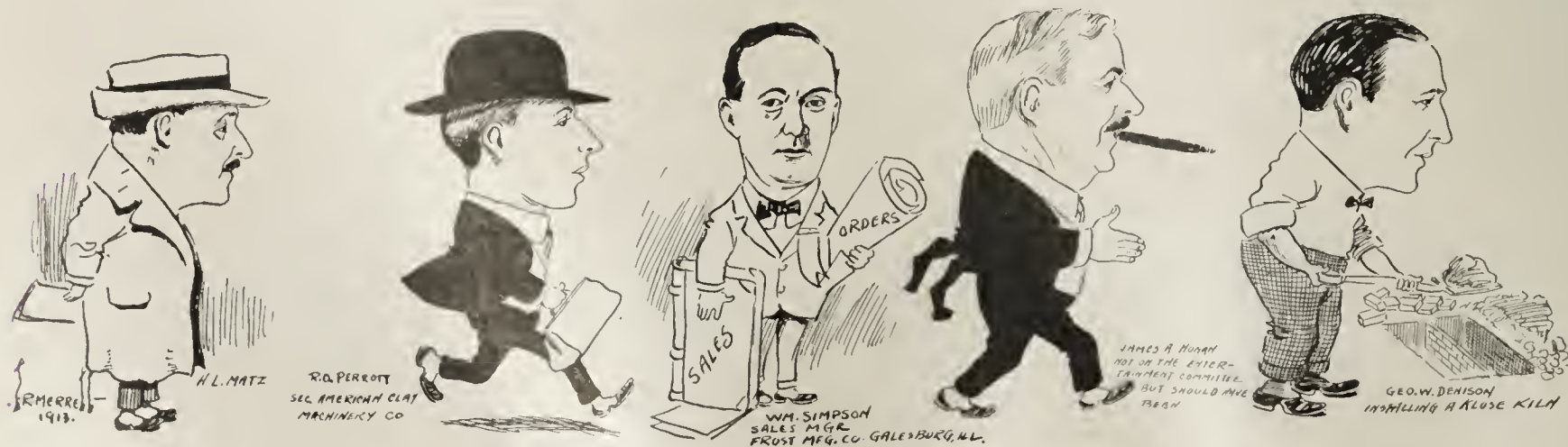
Traffic Committee—J. G. Barbour, Chairman; F. L. Manning, Portsmouth, O.; J. W. Robb, Clinton, Ind.; D. R. Potter, Clarksburg, W. Va.; G. O. French.

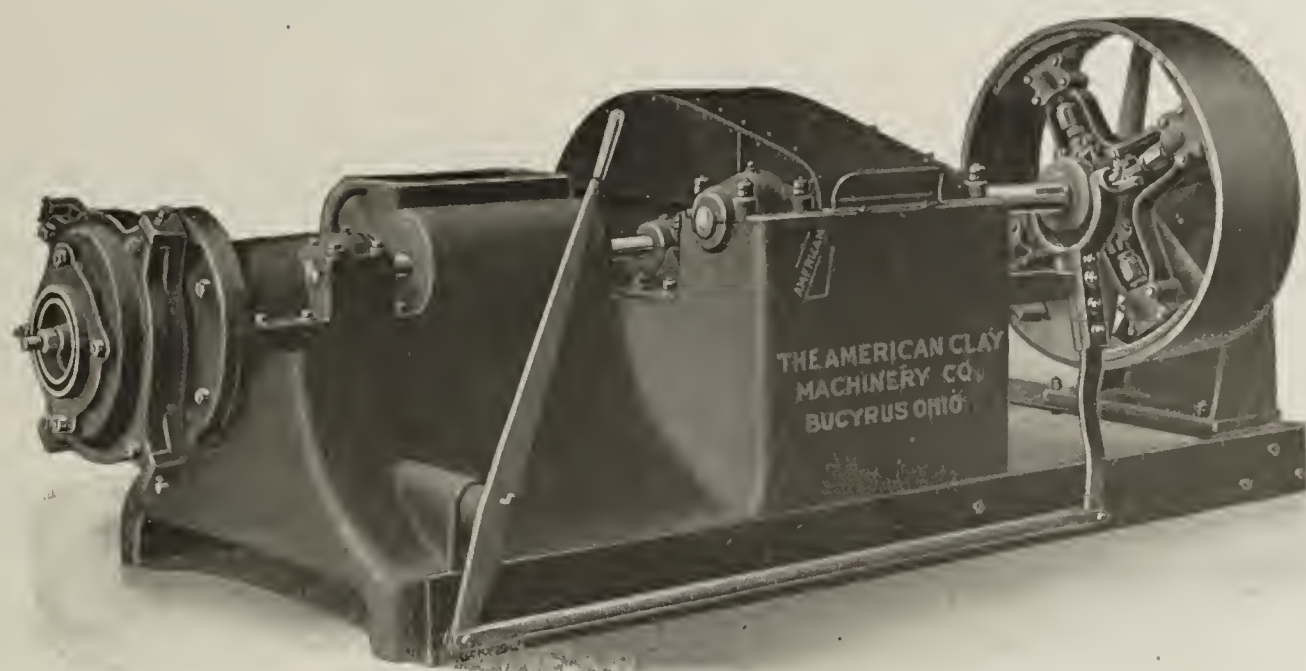
Wednesday morning the Advertising Committee held an executive session in the green room of the Congress Hotel, at which time the possible program of action for the fiscal year was given lengthy consideration.

NINE PLANTS JOIN PAVING BRICK ASSOCIATION

Take Full Membership in National Organization at Tuesday's Session.

At the Tuesday afternoon session of the National Paving Brick Manufacturers' Association, the following firms were received into full membership: Duboise-Butler Brick Co., DuBoise, Pa.; John Kline Brick Co., Wickliff, O.; American Sewer Pipe Co., Akron, O.; Novelty Brick & Coal Co., New Comerstown, O.; Harris Brick Co., Cincinnati, O.; Springfield Paving Brick Co., Springfield, Ill.; Sharon Clay Products Co., Sharon, Pa.; Mathias Stipp, Scranton, Pa.; Tuna Valley Brick Co., Bradford, Pa.





The No. 281 Auger Machine for Tile

THE No. 281 AUGER MACHINE

The "Baby Grand" of the Strong Family—Fourth of a Series

The No. 281 Auger machine is built complete from new patterns and is intended for use in making the smaller and medium sizes of ware. It will give best results on drain tile up to and including 8 inches internal diameter, but will make 10 and 12 inch sizes from suitable material as well as side and end cut brick.

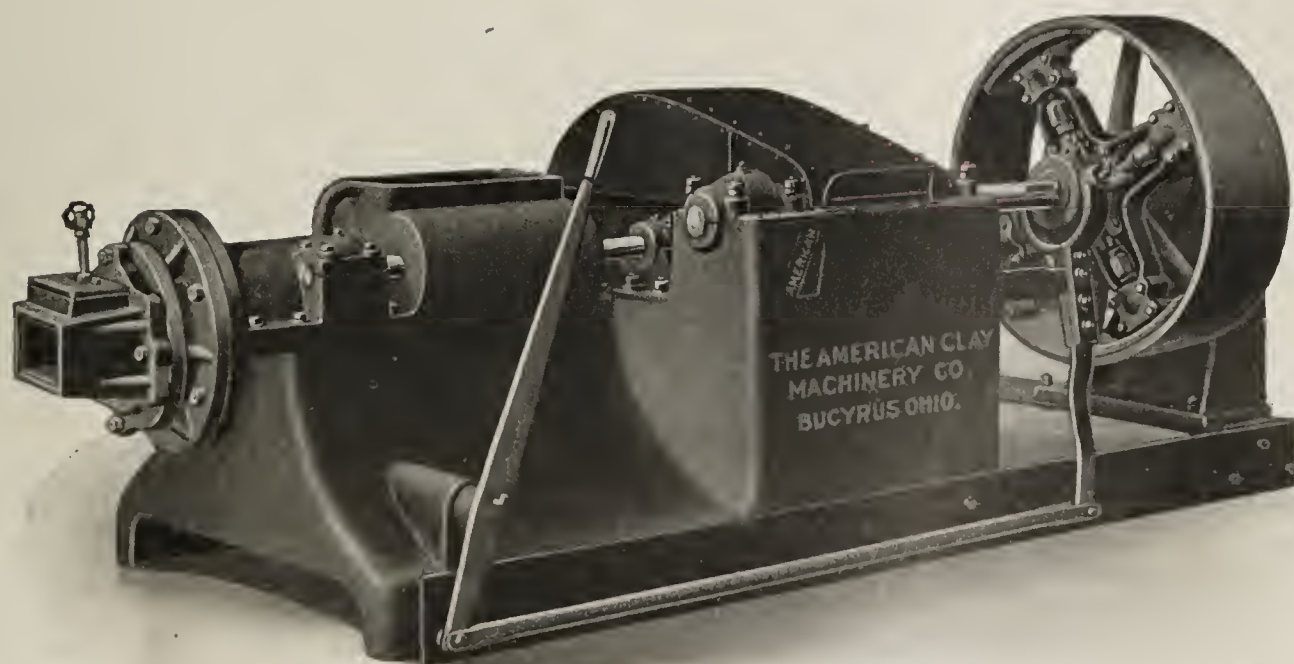
The gear frame and lower half of the clay cylinder is one casting carrying all the bearings except the one for hopper feeder and the outboard bearing. The bearings are of the reservoir ring oiling type, insuring constant lubrication.

The shafts are heavy and of steel; the gears are cast from new patterns, using our famous gear metal; they run in oil and are covered with a light steel, dust proof cover, excluding dust and retaining the oil in the gear

case. The hopper is provided with a very efficient feeder having reversible blades, split spiders, and may be removed and replaced through the hopper without disturbing any of the other parts.

The continuous screw is cast in sections with the wearing surfaces chilled entirely through; they take a high polish, are more efficient, and last longer than white iron or manganese steel.

The clay cylinder has removable liners over the expressing screw and can be cheaply renewed when worn out. The entire machine is mounted on heavy angle irons, making it self contained. This machine may be speeded to suit almost any capacity within reasonable bounds.



The No. 281 Auger Machine for Brick

See That Dependable Machine

The American Clay Machinery Company

Bucyrus, Ohio



Much the largest manufacturers of Clayworking Machinery in the world. And much the best.

RINGSIDE SCENE AT CONVENTION CHAMPIONSHIP BOUT



BY MILTON J. WILLIAMS

Referee of the Fight.

The big fight between "Knock-out" Fate and "Kid" Hoskins was a draw.

In view of the police interference I could call it nothing else but an even battle and declare all bets off.

If I was forced to give a decision on points as they had been accumulated by the principles at the close of the third round, undoubtedly I would have still called the match a draw.

"Knockout" Fate, the Plymouth Rooster, surprised his admirers by his nimble-footedness and the wallop he carried in both mitts, but "Kid" Hoskins, the Terre Haute Terror, won just as much admiration from his constituents by his aggressiveness and the

speed with which he followed up his attack.

Fate scored the only knock downs, but failed to stop his adversary, who seemed to be able to absorb more punishment than Battling Nelson.

If the fight had been permitted to continue there is some question just how it would have terminated, as Hoskins was growing stronger every minute and fast was solving Fate's wonderful defense. The Terror unbuckled a back-handed slap with a vicious kick in it after the second round as his solution to the problem before him and was mussing up the Plymouth Rooster's smiling face not a little, occasionally tilting back his head with a short, snappy jolt that traveled only a few inches, but carried with it the power of a trip hammer.

Fate's friends, however, declared that the Plymouth Rooster merely was conserving his strength and waiting for a spurt of speed that would dazzle his lighter opponent in the closing rounds.

Hoskins complained several times of Fate's torso. It prevented the Terror from rushing into a clinch. Fate was ordered to draw in his abdomen, but paid little attention to the command.

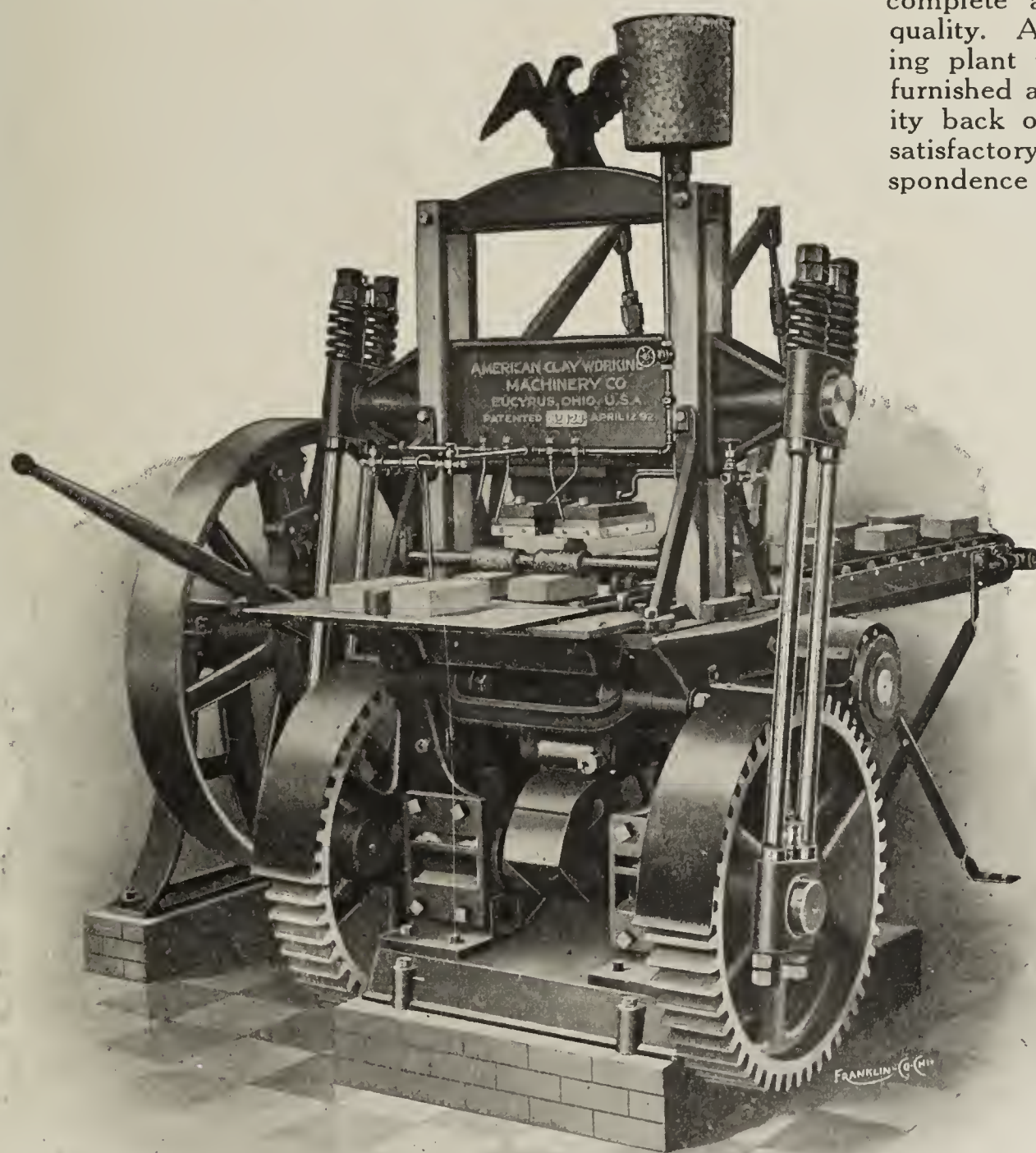
Once Fate upset Hoskins with a vicious right-hand swing, a regular haymaker. He was stood on his head by the wallop, but his chief second and adviser, "Cholly" Rorick, claimed afterward that the Terror merely was acting the part merely to deceive the Rooster into growing careless and leaving himself open for attack.

(Continued on page 390)

Good Roads, Better Roads, Best Roads

The whole country from New York to 'Frisco and from Maine to Texas is alive with the good roads question. Good roads of yesterday are bad roads today and will be vile roads tomorrow. That's because they are not built of brick. The day of the Vitrified Brick is here. No road will compare with it. None will equal it. The manufacturer of brick can look best to the interests of paved roadways by being sure that the quality of his brick is such as will insure long and satisfactory service. Good pavers are the product of good material, good machinery, good kilns. No one company is so well able to insure quality of pavers through quality of equipment as is the American Clay Machinery Co. Our line is

complete and replete with quality. Any unit for a paving plant will be promptly furnished and with the quality back of it to guarantee satisfactory service. Correspondence solicited.



The American Clay Machinery Co.
Bucyrus, Ohio, U. S. A.

See American Clay Magazine for further announcements

Much the largest manufacturers of Clayworking Machinery in the world. And much the best.

CLAY SHOW EXHIBITS

(Continued from Page 344.)

green. The tiles are double interlocking on all sides. For durability and comparative cheapness of cost the tile roof is the thing nowadays, according to roofing experts.

ROBINSON CLAY PRODUCTS CO., AKRON, O.—Stone ware products for household use was the main feature of the exhibit of this company, the main offices of which are at Akron, Ohio. Among the creations of the company is a line of stone cooking-ware which was shown in a number of different pieces, from small baked-bean pots up to covered meat roasters. A line of Rockingham and yellow ware, but principally in bowls, was also shown.



Section of a Sewer Built of Segment Blocks Shown by the American Sewer Pipe Co., Akron, O.

Five sizes of sectional water filters were given a prominent place in this exhibit.

The production of this firm also includes a line of jars, the capacities of which are from one-half to fifty gallons; jugs with overglaze blue treatment; tea pots in different glazes; chicken fountains; packers' jugs, steins and churns.

A miniature model kiln was erected in the centre of this exhibit, in which the firm showed several thousand visitors the manner in which stoneware is set when fired. Red-globed electric lights were used to represent coal firing.

This firm operates seven sewer pipe plants, all of which are working to capacity. The annual production in sewer pipe of this company amounts to thousands of cars. In addition to these properties the Robinson Company is operating successfully three stone ware plants, one fire brick plant and one drain pipe plant, all of which are located in Ohio. The annual production of all products of this firm total more than 20,000 cars.

The representatives of the firm at the Coliseum exhibit presented all interested visitors with souvenirs in the form of miniature sewer pipe lengths and "little brown jugs."

The Western branch of this company is under the able

management of the N. A. Williams Co., the main offices of which are in the Chamber of Commerce, Chicago.

THE FULPER POTTERY CO., FLEMINGTON, N. Y.—This plant had on view at the south end of the Coliseum an exceedingly artistic exhibition of glazed clay pottery in different colors. Beautiful specimens of vase work and examples of craftsmanship in lamp designs for gas and electric use were on display. The concern's products are trademarked under the name "Vase Kraft Pottery." Word description can only give a faint idea of the beautiful effects obtained in Vase Kraft by high firing.

"Colors are only part of the work in glazes," said Samuel L. Parker, sales agent of the company, and in charge of the booth display.

"Textures or tones, in addition to helping the colors, give an effect beyond the visible, namely, through the sense of feeling.

"Vase-Kraft glazes, therefore, for the purposes of description, are divided and named into classes, according to tone and texture. Each class is made up of every conceivable color and shade. One or more of a class or different classes may be blended, one into the other, giving boundless opportunities in color and tone scheme."

Styles in Indian, Mexican, Aztec, European and American pottery were shown in this exhibit. There was also shown an artistic example of glazed wall tiling of exquisite beauty in color effects.

EMANUEL DUSCHEK & SON, CHICAGO.—These manufacturers of high grade art pottery, who have been in the business in Chicago for 43 years, had an interesting exhibit of clay craftsmanship in the shape of artistically designed vases, jardiniers and lamp stands. This work has been made a specialty by this concern. Emanuel Duschek was in charge of the booth which is located at the southwest end of the Coliseum.

TRENTON POTTERIES CO., TRENTON, N. J.—"Clay is the best for sanitary bath room equipment." This placard which you saw in the exhibit of the Trenton Potteries in the north section of the Coliseum rang true when you proceeded to inspect the kitchen, bath-room and laundry utensils on display. The enameled clay laundry tub, the glistening whiteness of the wash basin stand, and the sink, and closet bowl that were to be seen at this booth were sure to impress you favorably, and you left this booth convinced that clay products were the most sanitary thing to install in equipping the plumbing features of a house.

THE PETERS & REED POTTERY CO., SOUTH ZANESVILLE, O.—This concern had a creditable exhibit of garden and house adornment of vases, jardinieres, pedestals, garden pots and fern baskets, made in their Moss Green Aztec treatment. This is an original creation in clays, duplicating the rich red brown tones of the ancient Aztec with a seemingly mossy deposit.

Moss Aztec may be relied upon to withstand the American climate, however severe, and is guaranteed against leakage. The vast amount of customers who have purchased Moss Aztec prove that the designs and products of the Peters & Reed Pottery Co. fill a long felt want in the decorations of the home and its environment.

AMERICAN ENCAUSTIC TILING CO., ZANESVILLE, OHIO.—What was considered by many to be the most beautiful and artistic display of the Clay Show was the faience exhibit of the American Encaustic Tiling Co. The side walls represented those of a dining room, while the background bore out the suggestion of a conservatory. The design was in English style with a trace of Byzantine. The paneled wainscoting and modeled

The Kiln of Economy

On the first of February we mailed you a copy of The Haigh Kiln Catalogue. If you have not received it, please notify us and we will send you another copy. This Haigh Kiln Catalogue is probably the finest and most complete piece of Kiln literature ever issued in any country. But the Haigh Kiln is worthy of it and the results our Haigh Kiln will get for you are just as attractive as our Kiln Catalogue.

Our Haigh Kiln is making good wherever used and will improve your product and reduce your burning cost if you will give it an opportunity to help you.

Look the catalogue through. Read its every line of accomplishment and promise. Write us about your plant and what you are paying for burning your product. We will give you an estimate of what saving our Haigh Kiln would effect. If it's not enough of a saving to interest you you need not install the Haigh Kiln. We know we can save a lot of your fuel. Let us tell you how much.

We build every machine and appliance used in the manufacture of Clay Products. Write us.



The American Clay Machinery Co.

Bucyrus, Ohio

See the American Clay Magazine for further Announcements



Much the largest manufacturers of Clayworking Machinery in the world. And much the best.

pilasters carrying a frieze and cornice were all executed in delicate gray tones. Panels between the pilasters were hung with silver gray silk velour, the harmony between the two materials being most marked. Mantels, also of faience, were built in each wall. In the background the focal point of interest was a wall fountain of ornate design with mosaic inserts. The floor was also of faience ware with a raised design, the whole having the appearance of a rich Persian rug. Throughout the entire display the delicate combinations of grays and greens produced an exceedingly soft and harmonious effect.

Every piece of tile used in this display was especially designed and made for the Clay Show. The notable feature of this ware is the unlimited scope in design and color possible of execution and the finished product preserves indefinitely its beautiful appearance, age and weather conditions having no visible effects on its surface.

E. H. Ingalls, H. D. Lillibridge and H. Scharstein who made and installed the complete design were in charge of the booth.

W. E. DEE CO., CHICAGO & HARVEY MOTOR TRUCK WORKS, HARVEY, ILL.—Wm. E. Dee, president of the Wm. E. Dee Co., as well as the Harvey Motor Truck Works displayed the various clay products his company manufactures and also his latest 1½ ton motor truck. The truck is sixteen feet long, finished in white with red stripes, giving a very clean cut appearance. It is equipped with extra good brakes and the solid rubber tires on die-cast steel wheels gives excellent satisfaction in the way of cutting down tire expenses. The truck was shown loaded with sewer pipe, surmounted by a spreading fern. Durability and strength are the watch words in the manufacture of these trucks.

In the booth were displayed various sizes and samples of drain tile, chimney tops, sewer pipe, wall coping, partition tile, fire proofing, flue lining and fire brick, all manufactured by this company. The two end walls were built of partition tile, with arch inserts of fire brick, tall chimneys topping the wall at each corner. On each side of the entrance were two tall columns of sewer pipe ranging from twelve to thirty inches in diameter. The company was represented by W. E. Dee, president; G. W. Dee, vice-president; J. L. Roberts; M. E. Whalen; W. M. Dee; and J. H. Vail.

W. S. DICKEY CLAY MFG. CO., KANSAS CITY, MO.—A very interesting feature of the W. S. Dickey Clay Mfg. Co.'s exhibit was two large paintings of a field on the farm of J. H. Dale, Warrensburg, Mo., showing the condition of the field before and after installing a "soil saving dam." The first picture shows the field badly cut up by gullies, down which the water rushed in every rain, carrying with it large quantities of surface soil. The second picture shows the same field after a few feet of clay tile were put in to check the waste of the soil, thereby refilling the gullies and restoring the farm land to fertility. Sections of vitrified, salt-glazed drain tile, seven sections of reducing sizes, piled one above another forming a pyramid 18 feet high, 36 inches wide at the bottom and 18 inches in diameter at the top, weighing 4,635 pounds were displayed; also two chimneys—one of the old fire trap design with the "defective flue" which causes a large percentage of the nation's fires, and the other an ideal modern fireproof chimney for a private dwelling. G. H. Tefft, secretary and sales manager for the fourteen Dickey factories was in charge of the booth.

FRIEDL & FLASH, CHICAGO.—One of the displays



Largest Piece of Sewer Pipe Ever Made, 42 Inches In Diameter, Shown in the Booth of the International Clay Products Bureau.

which deeply interested the clayworkers was a model chimney, with a ten foot base, exhibited by this concern. This type of chimney, representing the proper construction of a smoke stack, was inspected carefully by many visitors, who were interested in the causes for fires, which very often are caused by defective chimneys.

ALPHONS CUSTODIS CHIMNEY CONST. CO., CHICAGO.—A section of the base of a chimney, ten feet in diameter, constructed of hollow radial brick, was displayed in the booth of the Alphons Custodis Chimney Construction Co., of Chicago, showing the method of bracing with steel employed by this company. The company distributed a booklet containing a reproduction of the largest chimney in the world, built of this block. This chimney is 506 feet high, 78 feet wide at the base and 50 feet wide at the top. It takes care of several million cubic feet of gas every minute.

DENISON CLAY PRODUCTS EXHIBIT, MASON CITY, IOWA.—The following firms were represented in the display of the Denison Fire-Proofing Co.; Mason City Brick & Tile Co., Mason City Clay Works, Mason City Sewer Pipe Co., Mason City Drain Tile Co., and the Everlasting Silo Co., all of Mason City, Iowa, and the Julian S. Nolan, Chicago, fireproofing engineers exclusively for the above mentioned concerns.

The Denison load bearing tile manufactured under the Wilson system of bearing wall construction, was the main feature of this display. It was shown in all its uses—8 in., 12 in., 16 in., with stucco finish and 12 in., 16 in., 20 in., and 24 in. wall with brick veneer. The wind-proof window jamb construction and the Denison-Nolan two-way, long span, hollow tile floor construction, with which it is possible to span spaces up to 35x45 feet, were also illustrated.

The central point of interest in the exhibit showed the transverse section of a modern fireproof residence, coated with stucco applied directly to the tile on the outside and the plastering applied directly on the tile on the inside. The walls were of the Denison load bearing tile.

(Continued on Page 385.)

Grinding Mills For Sand Lime Brick

For the manufacture of Sand Lime Brick, Wet and Dry Grinding Mills do much to improve the quality of the brick, and thus popularize this type of brick and extend its market.



Many features in the construction of our mills are the direct outgrowth of our long experience in grinding silica sands, crushed rock, and similar substances, and more particularly in mixing and grinding sand and lime in their preparation for the manufacture of sand lime brick. The use of these mills enable the manufacturer to combine the several operations of moistening, mixing and grinding, into one, thus greatly simplifying and improving the method of sand lime brick making. The mills possess the further advantage of so grinding the sand that it is given the sharp and gritty consistency which is essential in obtaining a perfect bond between the sand and lime, and this is necessary to secure a high grade product. The abrasive action of the nullers by virtue of which the sand is broken up into sharp angular particles instead of a fine and granular powder, explains the high efficiency of the machine.

More than thirty of these machines have already been installed in sand lime brick plants throughout the United States and have in each case proven more than satisfactory.
We build every machine and appliance required for the manufacture of Sand-Lime Brick.



The American Clay Machinery Co.
Willoughby, Ohio, U. S. A.

Much the largest manufacturers of Clayworking Machinery in the world. And much the best.

ROBERT W. HUNT JNO. J. CONE JAS. C. HALLSTED D. W. McNAUGHER
ROBERT W. HUNT & CO., ENGINEERS
INSPECTION AND TESTS OF BRICK AND ALL CLAY PRODUCTS

CHICAGO 2200 Insurance Exchange Bldg.	NEW YORK 90 West Street	PITTSBURGH Monongahela Bank Bldg.	ST. LOUIS Syndicate Trust Bldg.
LONDON Norfolk House	MONTREAL Canadian Express Bldg.	TORONTO Traders Bank Building	SAN FRANCISCO 418 Montgomery St.
	SEATTLE 309 White Bldg.	MEXICO CITY Cinco de Mayo 6B	

FISKE QUILTS B. B. A. POST

(Continued from page 371.)

story of the Union and the bringing together of two broken parts of this country." That is what it means to be historical. There is feeling in the thing; there is sentiment in the thing.

Talk about money being the only thing. There is perhaps in your home a room that you very seldom go into. There is a bureau in that room. Every Sunday morning your wife goes into that room and she sits on the floor and she pulls out an old drawer and she takes out a little pair of socks that did not cost much, a little pair of shoes, and she drops the holy water of her tears on those little cheap things, and there is not money enough in all the banks, nor gold enough, nor green paper money enough in all the world to take away those little things. Why? Because they have a value that is above all dollars and cents.

The miracles of the Bible are nothing in comparison with the wonders that are happening today. We take the lightning and we say to the lightning, "Light up this hall. Obey us and do not hurt us." Think of the wonder of it. Think of all these marvelous things that are happening. Talk about the camel going through the eye of a needle, you know you can go down here within a few blocks of this hotel and you can go in and listen to a Victrola, and you can hear a whole grand opera going through the point. (Laughter and applause.)

Now, then, if you cannot put a brand on your brick, there are men who can. Perhaps you can not. The people have got to be made to see the wonders of brick. Here is a wonderful race going on just now which is very interesting, between wood and concrete and brick. It will be a question of the survival of the fittest. It is not necessarily the best that will survive, but the one that is best handled will survive, whether it be wood or whether it is cement, or whether it is brick, whichever is the best handled will survive. (Applause.) It is not in the material, it is you. There is nothing wrong with the brick. Maybe the wrong people have got it. (Applause.) And I will tell you that if I were handling this big race, I could take the other fellow's product and beat you to it. Their representatives do know the value of publicity.

In the first place, they took the mortar in between the bricks and they said, "Throw out the brick and leave the mortar," the most foolish thing anybody could say, but they are putting it across because they are putting brains in with the mortar. Now, they are trying this out with all kinds of fancy work, poured houses, crocheted houses, knit houses, every kind of a house. You can get a coffee pot and fill it with mud and pour it into a house. You make a house like you would pour a cup of coffee. They are doing all kinds of things to make concrete classy. No reason why you cannot make brick classy.

Why don't you ask women how to sell brick? Go and ask your wives. Most men are just about as sensible as their wives make them. (Laughter.) Ask your wife about brick. They are the ones who decide about the home.

Makes Suggestion for Advertising Illustrations.

I notice in your advertising that only one out of every ten pictures of houses has any people in it. Let me tell you this. The picture of a house is not worth anything. You ought to have a picture with a family right on the front doorstep, and a little baby and a cat and a dog—have the whole crowd. I can take a picture of a house with a family outside and I can sell it to Munsey's Magazine, or McClure's—I used to be the editor of a magazine myself—but you cannot to save your life sell any



PULSOMETERS

Cost less to purchase, install and operate than any other type of brickyard pump. They handle gritty water and never need lubrication.

Write today for our "Pulsometer Handbook." It shows many novel installations and contains valuable data on pumping problems.

PULSOMETER STEAM PUMP CO., 13 Battery Place, New York, N. Y.
 Chicago Office: 223-231 North Jefferson Street



"STAG" BRAND

Manganese Steel Castings

EDGAR ALLEN AMERICAN MANGANESE STEEL CO.

Chicago, Ill.,

New Castle, Del.

Attention! Mr. Clayworker,

Read Page 410 of this issue.

It will interest you.

KILNS, DRYERS

and

CONVEYING SYSTEMS

SPECIALIZED

EXPERT ADVICE

ED. H. CALLAWAY

ENGINEERING COMPANY

50 Church Street

NEW YORK CITY

"Buckeye Rails Are the Standard for Quality"

THE BUCKEYE ROLLING MILL COMPANY
 Exclusively Manufacturers of First Quality Light Steel
 Rails and Accessories

Offices: Steubenville, Ohio	Mills: Newark, Ohio
--------------------------------	------------------------

BUCKEYE **MEANS** **BEST** **MEANS** **BUCKEYE**

All Sections from
12 lb. to 40 lb.
per yard

Write or
wire us,
when in need.

No order too large to handle promptly or too
small to secure immediate attention.



Different Applications of "Natco" Tile Shown by the National Fire Proofing Co., Pittsburgh, Pa.

picture of a house that is empty to any magazine, because we have a saying among magazine men, "All houses look alike."

This has been done with other things. For instance, a few years ago there were those little old soda crackers sold out of a barrel for about 8 cents a pound. Nobody cared for the soda cracker, and they sold all kinds of fancy biscuits, all kinds of cookies and cakes, and there was that little old soda cracker in the barrel. Nobody loved it, nobody wanted it, a little cheap thing. Along comes the National Biscuit Company and it says: "Well, here are soda crackers. They are cheap to make. Why not let us get people excited about soda crackers?"

So they put them in a very fine box, in oiled paper, and they called them Uneda Biscuits. They made them classy. Now, you are paying 20 cents a pound instead of 8, and every house has got them. (Laughter.) You cannot keep house without them. You are not a civilized family unless you have them. It is the same old soda cracker that no one cared about, but you will hear the cry on all sides, "Uneda, Uneda." It is all over the place. Everybody is talking about that little old soda cracker.

A little while ago I got a lawn mower account. Nobody cared about lawn mowers. They don't make nice music, nobody cared much about them, but I played them up like this. I said: "The lawn mower is the LAST thing you buy. Isn't it funny, you furnish your houses, you put in a piano, you hang your paintings on the wall, you buy beautiful rugs, you decorate the inside, you make it as fine as long as your money lasts, and the last thing you think of is the lawn mower in front." So, I said, "Whenever you see a lawn mower in front you can make sure there is everything in the house." (Laughter.)

So every woman saw that if she wished the people to think her house was furnished complete, she would have to have a lawn mower, and this lawn-mower man who has a factory on the Hudson is working day and night turning out lawn mowers to supply the demand.

There was a man named Gillette, whom I used to know when he was on the road years ago, and he was an ordinary traveling man, but he went around the country and all of a sudden he thought of razors. He thought, "Why not make razors classy? Nobody pays any attention to razors, nobody advertises razors very much." So he went to work and made a razor like a hoe, which costs, so far as I know about the price of steel, about 35 cents, and then he said, "Now we will make it classy; we will play up razors."

Today we give 35 cents for the razor and \$4.65 for the pleasure of having a Gillette, and we are buying them, every one of us. We have all got them. If you are riding in the train and are in the smoker, and a man asks you what razor you use, you would be ashamed to say that you used the Kalamazoodiac razor because nobody ever heard of that. (Laughter.) You are ashamed to tell that man that you have got something that he does not know of, so you tell him, "I have a Gillette," and it costs you \$4.65 to tell him that. (Laughter.) But the price does not cut any figure.

You want to boom your brick. You should get up some kind of a diploma, a Class A diploma for the best built brick city in the United States. Make investigations and find out which is the best, which is the next best and so on. Get a certain Class A which you will only give to cities where there are over 50 per cent of the houses built of brick. In the cities competing, make some city proud of itself, publishing in its local paper it is in Class A in building with brick, so that the wood-house man will go out and hide his head. (Laughter and applause.) There is no reason why you cannot make them buy brick. Tell them the best way is the cheapest. The first cost is not the main thing.

If you take a cab, the average cost is \$1.50. That cab and



High Class Sanitary Ware Displayed by the Trenton, New Jersey, Potters.

F. L. BARTLETT, Pres.

F. L. STOWELL, Mgr.

Sterling Brick Company

Manufacturers of

**Olean Vitrified Paving Blocks
Dunn Wire-Cut Lug Blocks**

OLEAN, N. Y.



**Vitrified Shale Paving Blocks, Fire Clay
Paving Blocks, Dunn Wire-Cut-Lug
Blocks.**

Paterson Clay Products Co.
Clearfield, Pennsylvania

Marion Brick WorksTM
MONTEZUMA, IND.

MARION PAVERS

A Strictly High Class Paving Block

Also:

**Fancy Face
Building Brick,
Colonials,
Antiques, Etc.**

The Danville Brick Company

Manufacturers of

**The Unsurpassed
Danville Paving Block**

DANVILLE, ILL.

LET US QUOTE YOU PRICES

Terre Haute Vitrified Brick Co.

MANUFACTURERS OF

High Grade Vitrified PAVERS

Samples Free

Address **TERRE HAUTE VITRIFIED BRICK CO.**

Arcade Building, Terre Haute, Ind.

Murphysboro Paving Brick Co.

Manufacturers of

THE CELEBRATED EGYPTIAN PAVING BLOCK

THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

MURPHYSBORO, ILLINOIS

SHAWMUT VITRIFIED PAVING BRICK WORKS

SHAWMUT, PA.

Alfred Yates, Gen. Mgr.

Vitrified Shale and Fire Clay

Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

PURINGTON PAVERS

ARE MADE OF



The Purington Paving Brick Co.

GALESBURG, ILL.

that horse only cost \$1,000, and yet you must pay \$1.50 for the ride. You can take the trolley—the average trolley car here in Chicago costs about \$10,000, and then there is \$45,000 of securities piled on top of that car. You get in this \$55,000 car and you ride for nearly ten miles for five cents. You get in a cab and you ride a little ways for \$1.50. What does the first cost amount to? Nothing.

You take a horse costing \$300 and you plough with it. It costs you a dollar an acre more than it would to take a tractor that costs you \$3,000. The first cost is nothing. You have got to teach people that, that the first cost is nothing.

I have just come from Colorado, and I have just been down in Texas, and it looks to me as though this was a wooden country. There are little houses out on the prairie, a thousand miles from a forest, built of wood. All these hundreds and thousands of bonfire houses all over the country some day will have to be rebuilt. They are makeshifts, but one hundred thousand of them were built last year. There is no reason why you should not build those houses. There is no reason for it. The only reason is that the wooden house habit is just like the horse habit.

I am trying just now by a series of advertisements to cure this country of the horse habit. The horse only works three and a half hours a day, and you have to keep steam up twenty-four hours. He is a hay motor. (Laughter.) Horses were all right when you could buy them for \$60 and land was worth \$50 an acre, but when you have to pay \$300 for a horse, and land is worth \$150 an acre, the horse is an expensive luxury, because our 25,000,000 horses cost more for operating than our railroads.

What is a horse? He is only one hind leg anyway. He don't pull with his front feet. They are only pilot feet to hold his head up. (Laughter.) When he pulls he always has one hind leg off the ground. (Laughter.) Here are people buying horses because they don't know that. What is the use of paying \$300 for one hind leg? If a horse were made of steel, you could put three of them under the table. You could put a horse under each arm and stick one in your pocket. What is one horse power worth? You can buy one horse power for \$50, and you have to pay \$300 for a horse, so you can see people have the horse habit and they are losing money on horses every day.

Have you been reading Collier's series of articles on the bonfire houses? Do you know that our fire losses amount to a million and a half a day, or an average of \$450,000,000 a year? Wouldn't it be a fine thing if you had a set of emergency advertisements, and, whenever a wooden city half burned down, come out the next morning and say, "Rebuild with brick." Then you would be Johnnie-on-the-spot. Get ready for the fire before it happens, don't get there ten days late. Get there before the contracts are let, not afterwards. If you had somebody up in a conning tower watching over the whole country, the next morning there you are with your advertisement, "Rebuild with brick," so when the people come out and see the smoking ruins, they see right above the ashes the great big statement, "Rebuild with brick."

A little while ago I was in New Orleans, and down there the cypress people are very active. I saw one single ad down in the cypress headquarters in New Orleans that brought 32,000 answers. It was a picture of a bungalow with a family outside, a beautiful bungalow, and a little cozy family out in front of it, and that one ad put in a lot of magazines, has brought 32,000 answers in the last two years. The answers are coming in yet, showing what can be done with advertising.

You have got fine literature; you have got fine booklets, but you do not get them around. What is the use of telling one another? You know it. The public does not know it.

One man told me this morning you were over-sold. Go to the dictionary and find out what that means. Over-sold! You are UNDER-MADE, that is what you are. (Laughter and applause.) A man who thinks he is over-sold, let him go and get a push cart, that is where he belongs. Let him go and sell his brick by the dozen. That is the kind of business he belongs to. You ought to make five brick where you are making one. There is no reason why you should not make twenty billion brick a year.

Some of you may be from Pennsylvania and know where Oil City is. That is a pretty rough looking country, and sixty years ago they used to farm it after a fashion and in a whole year they made about forty dollars. But bye and bye an outsider came in there and he began to drill and he went down 60 feet, 64 feet, 66 feet, and he struck oil. Right underneath this shabby farm was the whole Standard Oil Company and they did not know it.

And so underneath your brick business if you have the nerve to spend your money, to bet your money on your own business, on your brains, on your brick, and mix our brain and your money with your brick, there is no telling what you can do in the sale of brick. GO TO IT. (Prolonged applause.)

PRESIDENT SIMPKINS: Gentlemen, I live in St. Louis and Mr. Casson has certainly shown me. (Laughter.)

Following Mr. Casson's talk hundreds crowded around him and extended congratulations. Judging from the expressions heard, his hearers felt repaid for having come to the convention by listening to him. The Convention was adjourned.

ABOUT THE HOTEL AND SHOW

(Continued from page 380.)

The method of fireproofing steel eye beams is shown with the Denison-Nolan shoe tile.

A very novel feature in this booth was a clay model, in relief of thirty-four residences that are to be built in Winnetka, about ten miles from Chicago. This model, measuring four by six feet, was worked out to the very finest detail and was about 1-125 actual size. All of these proposed residences are to be absolutely fireproof and Denison load bearing tile and floors are to be used in their construction.

The following men represented the different companies: F. A. Stevenson, vice-president of the Mason City Brick & Tile Co., and general superintendent of all of the above plants; B. C. Keeler, secretary and treasurer of Mason City Brick & Tile Co., Myron Stephenson assistant general superintendent of all the plants except the Mason City Brick & Tile Co., Mr. Harris, superintendent of the Denison Fireproofing Co., W. Millington, superintendent of the Mason City Sewer Pipe Co., and Everlasting Silo Co., Mr. Beecher, superintendent of the central grinding station; I. Nelson, superintendent of Mason City Clay Works; Julian S. Nolan, president Julian S. Nolan Co., F. H. Wright and Magnus Gunderson of the Julian S. Nolan Co., F. W. Merrill, salesman for all companies; B. V. Sewell, secretary and treasurer of the General Western Material Co., agents at Waterloo, Iowa; Mr. Strickland, president, Saskatchewan Supply Co., Saskatoon, agents.

WITH THE MACHINERY MEN

George C. Videtto, of the American Pulverizer Co., of E. St. Louis, Ill., was receiving the congratulations of hundreds of old and new friends at the Convention hotel. It seems this popular machinery man was married Feb. 27 at Canton, O., but he did not make the fact known as soon as he arrived at the Congress. However, his many friends soon "got wise," then congratulations were showered upon him thick and fast.

Quite a number of improvements have been made to the pulverizers of the American company during the last few months, both in the development and design of the machine. The quality of the product is such that the business of the firm for January and February this year was the largest two months' business the firm ever booked.

Chambers Bros. Co., Philadelphia, Pa., was represented at the Convention this year by A.R. Root, eastern sales manager, and E. G. Biechler, manager of the western sales department. This company had an exhibit of its machinery in Room 1175 at the Congress Hotel. The feature of the exhibit was a new automatic oiled brick machine which is known as the "Keystone Brick Machine, No. 1." This machine possesses a number of features not to be had heretofore and the representatives of the company were kept busy explaining its merits.

One score of the shop employes of the American Clay Machinery Co., of Bucyrus, O., came to Chicago Saturday and took in the Clay Show for two days as the guests of the company. A special Pullman car was chartered. Those in the party were: W. M. Hubbell, G. Michael, J. S. De Lashmutt, G. Meredith, C. P. Maden, A. Hoover,



All persons are NOTIFIED against INFRINGEMENT
FISKE & COMPANY, Inc., Boston New York

The Federal Clay Product Co. Mineral City, Ohio

Fire Brick for Kiln Work Made a Specialty

FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

— MANUFACTURERS OF —

Dover and Buckeye Fire Brick

Unexcelled for Kiln Purposes

509 Cuyahoga Bldg. --

Cleveland, Ohio

A J A X FIRE BRICK

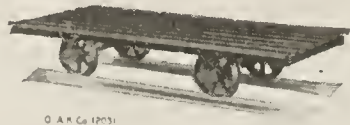


Two of the many hundred kilns built of these famous
brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.
195 So. Clark St., CHICAGO

Brick and Dryer Cars



Prompt Deliveries

Koppel

Rails, Frogs, Switch Points, Turntables, etc.

Sales Offices

New York, Pittsburgh, Chicago, San Francisco, Montreal

Plant; Koppel, Pa.

Orenstein-Arthur Koppel Co.

Fire Brick Facts For Kiln Builders

Do not overlook the quality of Fire Brick used in inner walls, crowns and fire arches of your kilns; this is all important. When fire brick begin to give away the whole kiln is impaired.

No brick construction will stand under strain of gradual contraction account of poor quality fire brick.

Consult us in advance of placing your orders.

Davis Fire Brick Co. Oak Hill, O.

BRICK MAKERS

Many of the largest users in your line, after costly competitive tests and experiments, are now specifying—

Evens & Howard Fire Brick

BECAUSE OF

QUALITY, PRICE AND SERVICE

We will be pleased to furnish complete information and quote prices on request.

EVENS & HOWARD FIRE BRICK COMPANY SAINT LOUIS

Established 1856

HENRY MAURER & SON

Manufacturers of

High Grade Fire Brick

Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

Office: 420 East 23rd St. New York, N. Y.

Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building

L. A. Henderson, Herman Schott, E. A. Baker, V. M. Virtue, George Sherer, C. F. Jones, Ross Black, Fred Steele, Cuno Eichman, John W. Venable, W. L. Jordan, George VanVoorhis, L. Haigh and E. J. Shaw.

Charles Burrridge, manager of H. Brewer & Co., of Tecumseh, Mich., machinery manufacturers, and G. S. Brubaker as salesman of the firm established headquarters in Room 1128 Congress Hotel. While the company had no exhibit this year, two representatives of the concern were pleased to meet and talk to the trade and their customers particularly until the close of the clay show. The Brewer company is one of the oldest in the business having been established in 1849.

Among the early birds on the job, as usual, was The C. W. Raymond Co., located in Parlors B-2 and 4. Their exhibit consisted of a kiln model from which the representatives are successfully interesting the fraternity in producer gas burning.

A model of the Berg Dry Press was also shown. They displayed three placards showing the wonderful size of their products, particularly the "999" Special Brick Machine which produces 200,000 brick daily.

The most interesting feature was the new model No. 4 cutting Table which, according to their claims, is fool proof, and could not cut a crooked brick if it wanted to. An investigation of this machine will prove interesting.

The representatives on the job this year were: Chas. W. Raymond, Jr., George M. Raymond, George H. Smith of New York, R. L. Dennison of Kansas City, D. H. Downey and Mr. McElroy, of Dayton, arrived during the week.

A lively crowd was found at the headquarters of the J. D. Fate Co. in Rooms 1118 and 1120 in the Congress Hotel where many customers and friends congregated daily. The company claims the honor of taking the first order for machinery at the Conventions—one from the Great Western Pottery Co., of Tiffin, Ohio.

This well-known firm was represented by President H. H. Fate, Secretary G. B. Drennan, H. R. Sykes, A. J. Votaw and George A. Anderson.

They have just received the first consignment of their beautiful new catalogues, fully showing and describing their well-known "Premier" line of clay working machinery, which they will be glad to furnish those interested. This catalogue is bound in flexible Russian leather, printed on heavy enameled paper and is gilt edged. It is one of the most costly ever issued by a brick machinery firm.

This company gave out very serviceable souvenirs in the form of hand sheepskin leather bound pocket hat cleaners.

The Bonnot Company, of Canton, Ohio, manufacturers of clay working machinery, opened headquarters during the clay show, in Rooms 1174 and 1176 Congress Hotel, where they were glad to meet the trade and discuss matters of mutual interest. A. A. Oldham, secretary and general manager of the Bonnot firm was in charge of the headquarters. Salesmen of the concern at the Congress hotel were: A. W. Aylesworth, of Canton; Roy G. Smith of Kansas City, Mo., and G. C. Stoll, of Los Angeles.

The company was giving away as souvenirs handsome leather billfold cardcases to members of the brick-making industry. The firm also distributed its elaborate 1913 catalogue which describes exhaustively the company's line of clay working machinery.

R. G. Ferguson, manager of the Dryer Department of the Massachusetts Fan Co., with headquarters in Cleveland, O., was at the Convention this year and made many new friends. Mr. Ferguson is an affable gentleman and of course booked a nice volume of business for his company.

G. B. Mentz, of Wallkill, N. Y., was showing a long line

of brick molds in suite B-16 on the first floor of the Congress Hotel. Mr. Mentz manufactures all kinds of molds and a number of improvements have been made on some of them. To visitors at this room, Mr. Mentz presented a combination pocket knife, one blade of which is so formed that it can be used as a belt punch and other purposes. The souvenir was admitted by the trade to be one of the most costly given convention visitors.

Among the old guard of the machinery men at the conventions, none would be more missed than H. J. Votaw of the J. D. Fate Co. He has been such a regular attendant at these meetings his face and pleasant greetings are a certain definite part of the national and many state conventions. He says he is only 38, but we all know how long he has been in the game, although his record for veracity was not intentionally strained when he said so.

A. W. Aylesworth of the Bonnot Co., admits he has made one of the biggest sales of the season—himself. The cards are not out for the date has not been set.

A. J. Dunn was at the Congress Hotel as the representative of the Chase Foundry & Mfg. Co., Columbus, O. This firm manufactures all kinds of dryer cars, with flexible boxing, dump cars for clay and shale, transfer cars, motor driven transfer cars, turntables, and turn-table transfer cars, switches, rails and portable tracks. Some sample cars and attachments were shown by Mr. Dunn and the exhibit proved to be one of great interest to the brick manufacturers attending the convention.

The Manufacturers Equipment company, of Dayton, O., manufacturers of the Meco Joplin Rock Crusher for crushing shale, lime stone, sand stone, ores, etc., established headquarters at Room 1122, Congress Hotel.

J. L. Scholl, president of the firm, and I. M. Justice, vice-president and other officers were on hand to greet and talk to the brick makers.

In the same room the Underwood Engineering Company, of Detroit, Mich., was represented. J. T. Underwood, vice-president of the concern, was looking after the interests of the company in Chicago during the clay products show. He was here to meet the members of the trade and to introduce a new method of burning up-draft kilns with producer gas instead of oil. The new process is the invention of C. K. Davis, vice-president of the company. Patents have been applied for.

The Baird Machinery Mfg. Co., of Detroit, Mich., held an exhibit at 1462 Wabash Ave., opposite the Coliseum, during the Clay Show, at which place it had set up one of its small size automatic pottery molding machines. This improved machine has a capacity of all sizes of clay pottery up to and including six-inch sizes. A great many visitors to the show, who were interested in making pottery, inspected the machine, and a number of orders were booked. From the reports of those who have already used the machine we believe it is destined to be a very popular one with the manufacturers of pottery. Full information regarding this improved machine may be secured by writing to the head office at 56 Jefferson Ave., Detroit, Mich.

George B. Drennan, one of "The Last of the Mohicans" of the original dryer and machinery men, was prominent among the convention visitors. Probably no man has visited more clay plants in this country than he, and he is full to overflowing of reminiscences of these many visits.

R. A. Bradford, representing the Auburn Wagon Co., of Martinsburg, W. Va., was on hand with models of the Martinsburg brick wagon and also a model of a new dumping body on turn table, arranged to mount on a



An Oil Burning System

Of the *Tate-Jones* type saves time, labor and fuel, and insures a very uniform product. It is easy to install and has many advantages over any other type.

Let us explain it to you.

Tate-Jones & Co., Inc., Pittsburgh, Pa.

J. M. CUTSHALL

CARL CUTSHALL

General Contractors

WE BUILD CLAY PLANTS COMPLETE

Kilns for Burning Clay Products of Any Class;
Square, Round, Down Draft or Gas Fired
continuous Kilns; also Most Improved Dryers.

BRAZIL

INDIANA

Ed. H. Callaway Engineering Co.

50 Church Street
NEW YORK CITY

Consulting Engineers

Brickologists

Clay Specialists

Designs for Complete Plants

PERFORATED METAL SCREENS

As required for
**BRICK
MAKERS
USES.**



Manufactured
by

New York Office
Room 1028 Cortlandt Building

HENDRICK MFG. CO.
CARBONDALE, PA.

Your Kilns

are a BIG factor in the success of your plant. Your investment demands the best you can get: in other words

THE IMPROVED FLUE SYSTEM KILN

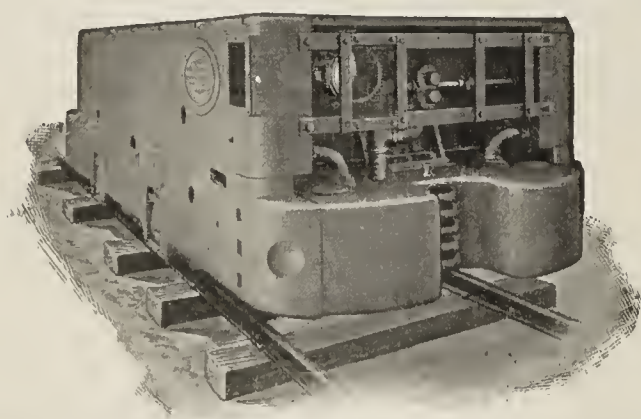
the kiln that produces dividends.

We are prepared to contract for the erection of your new kilns, dryers, etc., or will sell you comprehensive working plans at a very reasonable figure. Ask us about it.

George E. Snowden & Co.

New Cumberland, W. Va.

Gasoline Haulage Motors



UNDERGROUND TYPE.

Over 30 different companies using these motors for their main haulage.

Write for Bulletins.

GEO. D. WHITCOMB CO.

Rochelle, Illinois

chassis. The models attract a good deal of attention. The company gave Key West cigars to all visitors. The cigars were made of an excellent quality of tobacco and the little bands on them contain the words "Martinsburg Brick Wagon."

The E. M. Freese Company, clay working machinery manufacturers of Galion, O., established headquarters during the clay show at Room 1156, Congress Hotel. The representatives of the firm who were here to greet and discuss trade matters with callers were Messrs. H. H. Freese, A. J. Freese, B. E. Place and G. E. Hess.

The Freese concern maintains branch offices in New York, Pittsburgh and St. Louis, and does a widespread and profitable business. At the Congress the firm's representatives were giving away as souvenirs handsome billfold pocketbooks and distributing to the trade catalogs and other pamphlets.

Representatives of the Stephens-Adamson Manufacturing Company of Aurora, makers of belt conveying systems for brick plants, opened up their clay show headquarters at Room B 32, Congress Hotel. W. B. Green, editor of the Labor Saver, the house publication put out by the concern, and Colby M. Avery, of the mine and smelter department of the firm, were on hand at headquarters to shake hands with men of the trade and explain the working of a display of elevating and conveying machinery and ball-bearing conveyors which has been installed at the room.

This progressive Illinois concern has branch offices in New York and Chicago, and the business ramifications of the company extend into many states in the Union. A visit to the firm's show headquarters at the Congress will be of exceeding interest.

G. A. Anderson, the representative of the J. D. Fate Co., Plymouth, Ohio, was on the ground all week and no one was busier than he in greeting his many friends among the clay working fraternity with the Anderson brand of smile, only with an extra hitch on it. He, of course, plied his trade at the same time and reports that his efforts were not in vain.

George J. Potts, recently elected president of the C. & A. Potts Company, of Indianapolis, Ind., arrived in Chicago Wednesday and opened headquarters for his firm during the show at Room 1262 Congress Hotel, where he was kept busy shaking hands with men of the trade.

The Potts company are manufacturers of soft mud brick machinery, and they carry on a nation-wide business. At headquarters Mr. Potts was distributing the concern's 1913 catalogs and other firm literature. Major Downing, a salesman of the company at Indianapolis, was associated with his chief at the headquarters.

The Ohio Ceramic Engineering Company, of Cleveland, O., manufacturers of contractors' equipment and small cars, had installed an interesting exhibit at Room 1365, Congress Hotel. Models of the firm's No. 167 Double Deck Dryer Car for brick manufacturers were being shown to interested groups of callers. Literature pertaining to the manufacturing activities of the concern was being distributed by D. L. Wadsworth, who is representing the firm in the city during the clay show. The latter reports business conditions better than ever before in the history of the company, and that the outlook for 1913 shows every indication of a still greater volume of trade.

Paul McFadden, of Toronto, Ont., secretary of the Toronto Fire Brick Co., arrived in Chicago Tuesday morning, his first trip to a convention. Mr. McFadden is the son of H. H. McFadden, a well-known newspaper owner of Steubenville, O. Accompanying Mr. McFadden

to Chicago was Mr. Nicholson, president and general manager of the firm.

Samuel B. Goucher, a well-known sewer-pipe manufacturer of Toronto, the new general manager of the sewer-pipe department of the National Fire Proofing Co., of Pittsburg, Pa., with offices in the Fulton Building, could not miss the convention and arrived bright and early Thursday morning. He is very popular among the trade.

At the booth of the Brown Instrument company of Philadelphia a miniature kiln demonstration proved a source of much interest and discussion among prospective buyers. The Brown pyrometer which measures the temperature of the kiln was a feature of the demonstration. The Keystone Electric Company, of Philadelphia which is a branch of the Brown firm displayed at the same booth a very complete line of electrical instruments which are much used by clay workers. The company was represented at the booth by R. P. Brown, president of the firm, J. W. Lazear, of Chicago, W. H. Gibb of Pittsburgh.

The exhibit of the Taylor Instrument Companies of Rochester, N. Y., at Room 1130, Congress Hotel, attracted much attention among brick manufacturers who witnessed the demonstrations which were in charge of J. A. Sutherland, Chicago manager of the firm.

This interesting demonstration of the working details of all types of indicating and recording thermo-electric pyrometers was worthy of the personal attention of all brick makers. The Fery Radiation Pyrometer manufactured by the company also evoked considerable comment.

George H. Fiedler, president of the Provident Trust and Security Co., Shaw Kiln Co., Atlanta, Ga., came to the convention and spent his time while in Chicago explaining the value of the Shaw kiln. He did considerable business while here and declared the trip was one of profit.

R. L. Dennison, known to his many friends as just plain "Bob" and manager of the Kansas City, Mo., office of the C. W. Raymond Co., arrived in Chicago on Sunday. Bob came direct from Texas, making the trip from El Paso in record time. He claims the Texas people are of the opinion that the Mexicans are fighting about something they do not know anything about. While at the convention last year Mr. Dennison made some record sales for the Raymond Co. and he expected to surpass his previous sales this year.

Wellington Machine Co., of Wellington, O., was represented by R. C. Bennett and J. W. Hensley, showing samples of moulds and their catalogues of trucks and barrows. They were pushing their Duke of Wellington soft mud brick machine.

Charles G. Stevenson, the head of the well-known Stevenson Co., Wellsville, O., arrived in Chicago Wednesday morning and as soon as the door of the Congress Hotel was opened to admit him, he was the centre of a group of friends. "Charlie" is one of the liveliest wires in the machinery game and because of his late arrival many thought that he would not be here, as the report was circulated in the Congress lobby on Monday that he was in Florida for the season. However, he said he did such nice business here last year that he just could not stay away this season. The first money he spent when he arrived at the hotel was to pay his initiation into the Chaldeans.

In the main convention hall at the Congress Hotel, the Frost Mfg. Co., Galesburg, Ill., distributed a lot of illustrated and descriptive literature of the plant and products of this company, which was established in 1851.






The "Martin"

BRICK MACHINERY



Soft-Mud or Stiff-Mud Processes

Get Our Plans

Dry or Wet Grinding Pans

Barrows and Trucks

Disintegrators

Clay Cars--Dryer Cars

Hoisting Drums

Modern

YARD SUPPLIES






The Henry Martin Brick Machine Mfg. Co.

GET MARTIN
PRICE
LIST



LANCASTER
PENNA.
U. S. A.

GET OUR BIG CATALOG

SCHULTZ EQUIPMENT

For Brick, Tile and Terra Cotta Plants

We make a specialty of designing and furnishing complete machinery equipment for all kinds of clay-working plants, including expert engineering service in supervising erection and installation.



Double Pug Mill equipment, especially designed for the perfect preparation of material in the manufacture of terra cotta

SCHULTZ HEAVY DUTY FRICTION CLUTCH

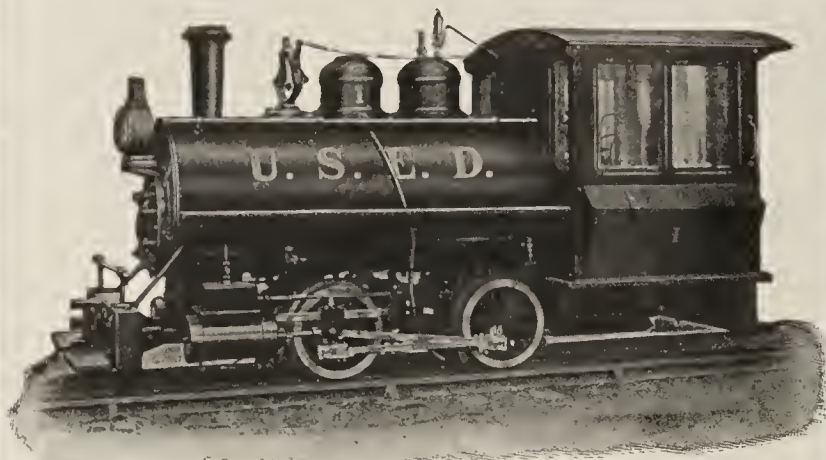
suitable for all purposes. If you are having clutch trouble, write to us and we will show you the way out of your difficulties. Complete brick plants furnished promptly, including auger machines, pug mills, clay cars and granulator shafts. Cutting and cut steel gears always in stock for brick machines, also granulator knives. Remember, we are brick works engineers and will be glad to advise you regarding any improvements or repairs which you contemplate.

A. L. SCHULTZ & SON, 1675 Elston Ave., Chicago

CLAY HAULAGE

Reduce costs of transportation by using a

Davenport Industrial Locomotive



Small Size—Reasonable Cost—Especially built for use of clay-products manufacturers, for hauling clay or shale from pits or mines to plant.

Cheaper Than Horse Transportation

and will reduce costs of delivering your material to your plant, thus increasing profits.

All About Modern Industrial Railways

Write us for particulars

Davenport Locomotive Works

Davenport, Iowa

BRANCH OFFICES: St. Louis: 654 Pierce Bldg.
Chicago: 12 and 14 So. Canal St. St. Paul, 1308 Pioneer-Press Bldg.
Seattle: 617 Western Ave. New York City, 30 Church St.
Canadian Representative: F. H. Hopkins & Co., Montreal, Que.

FATE-HOSKINS TITLE BOUT

(Continued from page 376)

Jo. Trautwein was the official announcer of the bout and introduced the principals. Harry Flood kept time. Charlie Stevenson and Ray Sykes were in Fate's corner and Jno. Moroney and "Cholly" Rorick looked after Hoskins' interests. Following the introductions Manager Wells challenged the winner in behalf of "Billy" Durbin, the Hoosier wonder.

The men posed for the camera and time was called. The fight by rounds:

FIRST ROUND—Fate sparred for an opening. Hoskins feinted Fate into a clinch and Hoskins was carried to the floor by the superior weight of his foe. Hoskins escaped being crushed to death by rolling out from under Fate's torso just in time. Fate landed a light left to the face, leaving a smear of charcoal. Hoskins swung viciously for the jaw, but Fate nimbly sidestepped and smothered the Terror with a series of rights and lefts. The Terror plainly was puzzled as he took his seat.

SECOND ROUND—Hoskins, somewhat doubtful, but still aggressive, met the Plymouth Rooster in his own corner. He fanned three times, Fate's torso preventing him from reaching the jaw. Fate uppercut, tilting Hoskins' head back. Hoskins dived between Fate's legs and hid for a while beneath his torso. Fate, somewhat bewildered and unable to locate his adversary, shadow-boxed. Hoskins popped up from behind and hit Fate on the back of the neck—the only vulnerable spot presented to him. It was his first punch and gave him added encouragement. As the round closed Fate landed a hay-maker on the tip of the chin and lifted Hoskins eighteen feet in the air. Hoskins landed on his head. He came up smiling, however, and made a dive for his favorite hiding place—beneath the torso—but Fate was wise to the trick and crossed his legs.

THIRD ROUND—Hoskins was more aggressive. He uncovered a back-hand slap that worried Fate. The Terror applied it in a novel manner. He permitted Fate to chase him around the ring and then began to work his trick. Twice he jolted Fate hard and had him in distress. Fate managed finally to get Hoskins in a corner and hurl him into the ropes. Hoskins tried to clinch, but could not get his arm around Fate's torso. He complained to the referee without success. Fate sent Hoskins into the ropes, but the Terror came back strong and was mixing it viciously with the Plymouth Rooster when the police stepped into the ring.

Following the unsatisfactory termination to the battle, both principals expressed a desire to fight again at next year's convention and articles of agreement will be signed at once for the same. It is probable that "Brick and Clay Record" will offer a loving cup to the winner, there to be engraved thereon a suitable inscription showing that the winner thereof is the holder of the Chaldean championship.

ADS

that will sell BRICK

Are found in the NEW BOOK on how to Sell BRICK and CLAY PRODUCTS

This book will be sent you, all charges prepaid, upon receipt of your check, money order or draft for

\$5.00

Don't worry about how you'll get up an ad to sell Clay Products, consult the Clay Book, it will give you good ideas.

Brick and Clay Record

445 Plymouth Court, Chicago

DENISON TILE LICENSEES FORM NEW ASSOCIATION

A representative gathering of Denison Tile Licensees convened at 9 o'clock Wednesday, at the offices of the Clay Product Company of Chicago, Stock Exchange Building. More than a score of licensees and prospective licensees were present, and listened to the discussion of questions of interest to manufacturers, and bearing upon ways and means of perfecting a closer and more helpful organization among Denison Tile Licensees, and to determine upon some method of a universal advertising of Denison Tile in widely distributing periodicals and indexes.

The speakers who addressed the meeting were representative men, hailing from various sections of the country, and their views aroused considerable discussion.

J. H. Payne, of the Fraser Brick Company, of Dallas, Texas, the first speaker, read a paper on "General Advertising," which was listened to with marked attention.

B. J. Graham, of the Ohio Clay Company, of Cleveland, spoke on the subject "Salesman's Talking Points." He pointed out that a building of Denison Tile had greater real estate value by reason of its fireproof construction. He declared that he recently came across some very interesting statistics along this line. He said that, approximately speaking, one house catches afire every three minutes during the year in the United States. In other words, according to Mr. Graham enough houses burn annually to build a city the size of St. Louis. This, he continued, involved a per capita loss of about \$3.50 in this country.

"In Italy the average loss per capita was twelve cents per year," said Mr. Graham, "while in Germany it averages forty-five cents per year."

The third speaker was F. W. Eastman, of the Far West Clay Company, of Tacoma, Wash. His theme, "Economic Handling in Manufacture," was replete with many good points of educational interest to the trade.

The other representatives who addressed the gathering were W. C. Denison, of the Denison Tile Engineering Company, of Cleveland, O., and R. D. Hatton, of the LeClede-Christy Company, of St. Louis. Mr. Denison in his talk said that every fair-minded building commissioner and city council in the country who have studied the merits of Denison Tile have approved of this form of construction.

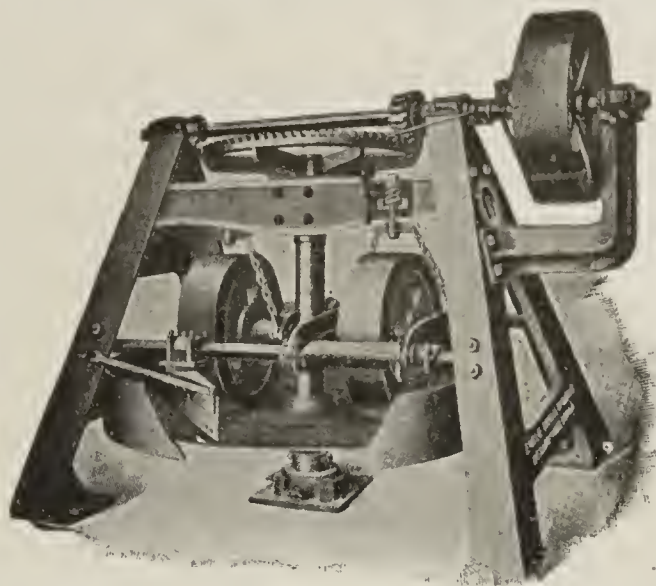
Before the meeting adjourned a general discussion of topics presented was held. Business and routine matters were then taken up.

Among those present were M. E. Miller, Warner-Miller Co., New Haven, Conn.; J. H. Payne, Fraser Brick Co., Dallas, Tex.; R. L. Parker and F. W. Darling, Clay Products Co., Chicago; W. C. Denison and B. J. Graham, Ohio Clay Co., Cleveland, O.; J. Denison and C. V. Kerfoot, Denison Clay Co., Coffeyville, Kan.; L. L. Denison, Delaware Clay Co., Del.; Mr. Bray, Western Clay Mfg. Co., Helena, Mont.; H. Stafford, Georgia-Carolina Brick Co., Augusta, Ga.; R. D. Hatton and Mr. Green, LeClede-Christy Co., St. Louis; H. C. Carpenter, Suburban Brick Co., Wheeling, W. Va.

Just before the close of the meeting a committee was named to determine upon the meeting place of the licensees in 1914. This committee will arrange to have the meeting in conjunction with the next big Clay Products Exposition.

Samples of the Berry Hygienic Ventilator, general offices located in the Rand McNally Bldg., were shown in the north end of the Coliseum.

The "Eagle" Dry Pan



With independent and suspended mullers,
has more

Distinctive Points of Merit

than any other Pan on the market.

DESCRIPTIVE CATALOGUE ON REQUEST

EAGLE IRON WORKS, Builders
DES MOINES, IOWA



Chase Improved Flexible Bearing Folding Deck Dryer Car

See this car before placing your order.

We also manufacture a full line of Side Dump, Bottom Dump and General Purpose Cars, Transfer Cars, Turntables, Switches, etc.

The Chase Foundry & Mfg. Co., Columbus, O.

THE OTIS

Tubular Feed Water Heater, Oil Separator and Purifier

is not an experiment but a tried and trusted appliance that the makers are not afraid to

GUARANTEE

To heat the feed water to the *boiling point* (210 to 212 degrees) with the exhaust steam without causing any back pressure, also to *extract the oil from the exhaust*, so that the exhaust steam after being passed through the heater can be used for other heating purposes, and the water of condensation for the heating system be returned to the boiler without the *additional expense of an eliminator*.

We are so sure of the OTIS that we agree to pay all cost of a trial—freight, cartage, piping, etc.—if it fails to do all we claim for it.

Catalogue and Prices at Your Service

The Stewart Heater Company,

33 EAST DELEVAN AVENUE . BUFFALO, N. Y.

GALA WEEK FOR LADIES.

Theater Parties, Sightseeing Tours, Banquets and Musicales Make the Week Joyous.

Convention week was one round of pleasures for the visiting ladies. Upon registration at the Chicago Clay Club headquarters, 1162 Congress Hotel, especially reserved for the lady guests, each lady was presented with a badge and handsome souvenir hatpin, bearing the initials C. C. C., also a clay show pennant in purple and white attached to a cane. Miss Grace Kimbell, as chairman of the entertainment committee, ably assisted by Mrs. Kimbell and other Chicago ladies, was kept busy organizing sightseeing parties and seeing that the guests had a good time in general. Wednesday, a group visited the wonderful Field Museum at Jackson Park in the morning; other parties viewed the art collections at the Art Institute both morning and afternoon. Wednesday evening wives of Chaldeans were the guests of "Brick and Clay Record" at a theater party at the Studebaker Theater, where they witnessed the remarkable and daring play, "Blindness of Virtue," which has had such a long and successful run. The occasion was planned that the ladies might be entertained while their husbands were attend-



Group of lady delegates in front of Congress Hotel. In the group are the following ladies: Mrs. Geo. Clippert, Detroit, Mich.; Mrs. H. D. Kiger, Fulton, Mo.; Mrs. D. D. Deeds, Elyria, O.; Mrs. J. M. Jenkins, Montgomery, Ala.; Mrs. G. B. Mentz, Wallkill, N. Y.; Mrs. Chas. Raymond, Dayton, O.; Mrs. Chas. Hoshour, Oklahoma City, Okla.; Mrs. A. J. Dunn, Columbus, O.; Mrs. C. E. Jewett, Nelsonville, O.; Mrs. J. Terry, Kingston, N. Y.; Mrs. H. H. Stafford, Augusta, Ga.; Mrs. C. P. Mayer, Bridgeville, Pa.; Mrs. and Miss Root, Fort Worth, Tex.; Mrs. J. T. Murphy, Nelsonville, O.; Mrs. O. N. Townsend, Zanesville, O.; Mrs. R. G. Elsenhart, Horseheads, N. Y.; Mrs. Wm. Hanley, Bradford, Pa.; Mrs. E. C. Kimbell, Chicago.

ing the grand initiation ceremonies of the Ancient Order of Chaldeans.

Thursday was a "full" one. In the afternoon, through the generosity and courtesy of the Chicago Clay Club, the ladies enjoyed a matinee party at the Princess Theater, where "Bought and Paid For" is closing an engagement. More than 150 of the choicest seats on the main floor had been reserved. Richly attired, decorated with badges and displaying gay Clay Show pennants, the party attracted no little favorable comment. That evening occurred the crowning event of the week, the grand banquet in the Gold Room of the Congress Hotel. While Friday was left more or less an open day, giving the ladies an opportunity to shop and visit the Clay Show, a number of excursions were planned, including a visit to the famous Union Stock Yards.

MAJESTIC

FOUNDATION
COAL CHUTE

Protects the building just where most needed — above the opening.

The heavy steel hopper catches all the coal.

When not in use, the hopper lies in the bottom of the chute body. The door locks automatically either open or closed. Strictly burglar-proof. With ¼-inch wire glass or steel panel in door.

Write for circular and address of nearest dealer.

MAJESTIC FURNACE CO.
Huntington, Indiana

MERGER OF ASSOCIATION CONSIDERED.

Associations for Standardizing Paving Specifications and Municipal Improvement Talk Combine.

When the Society for Municipal Improvement convenes in Wilmington, Del., next June, a proposition will be considered to merge this organization with that of the Association for Standardizing Paving Specifications.

The latter association held a four days' meeting in the Ft. Pitt Hotel, Pittsburgh, Pa., late in February, and elected the following officials for the fiscal year: President, Norman S. Sprague, superintendent of the Pittsburgh Bureau of Construction; first vice president, Nelson P. Lewis, New York; second vice president, George W. Tonson, Toledo, O.; third vice president, Linn White, Chicago, Ill.; fourth vice president, W. P. Hempelmann, St. Louis, Mo.; and secretary-treasurer, John B. Hittell, Chicago, Ill.

REFRACTORY MEN ORGANIZE.

The refractories manufacturers from different parts of the United States met at luncheon in the English Room of the Congress Hotel, Thursday afternoon and effected a permanent national organization to be known as The Refractories Manufacturers' Association.

There was present over twenty of the leading manufacturers of firebrick, silica brick, magnesia brick, chrome brick and allied refractory material. H. D. Savage of the Ashland Firebrick Co., of Ashland, Ky., was elected president, and J. H. Cavender of the American Refractory Co., of Chicago was made secretary and treasurer.

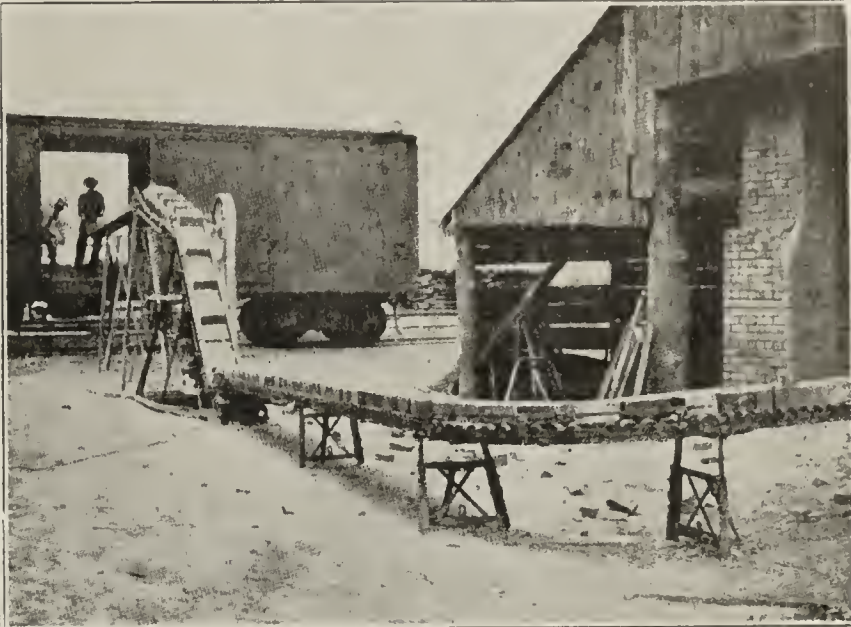
It is the intention of the new organization to extend the invitation to membership to the other manufacturers throughout the country who were not represented at the meeting. Those of the trade who were in attendance showed a keen and enthusiastic interest in the movement and entered into the discussion with zest and vigor.

After an hour's discussion the meeting of the new organization adjourned. It was voted that the next session of the association would be held in Pittsburgh, Pa., during the early part of April, to make this organization an association of far reaching effect in the clay-products field.

BIG SHOWING OF DUNN LICENSEES.

Among the licensees of the Dunn Wire-Cut-Lug Brick Co. and their representatives attending the Clay Show and conventions, were Charles J. Deckman, Spencer M. Duty, H. C. Moatz and D. E. Humphrey of the Deckman-Duty Brick Co., Cleveland, Ohio; W. P. Whitney, H. C. Adams, J. C. Mullarkey and Mr. Broderick of the Danville Brick Co., Danville, Ill.; C. C. Blair, J. R. Rowland, F. R. Kanengeiser, A. J. Aubrey, E. P. Foster, P. A. Kanengeiser and Mr. Whitworth of the Bessemer Lime Stone Co., Youngstown Ohio; Eben Rodgers and H. L. Mayers of the Alton Brick Co., Alton, Ill.; D. Warren DeRosay of the Corry Brick & Tile Co., Corry, Pa.; A. P. Mauer of the Metropolitan Paving Brick Co., Portsmouth, Ohio; W. M. Hodges and R. M. Hodges of the Tuna Valley Paving Brick Co., Bradford, Pa.; J. W. Robb of the Clinton Brick Co., Clinton, Ind.; C. E. Foster, G. E. Burgess, G. W. Foster and W. A. Palmer of the Foster Paving Block Co., Bradford, Pa.; L. A. Culver of the Wabash Clay Co., Veedersburg, Ind.; and F. B. Dunn, Conneaut, Ohio; W. T. Blackburn, Paris, Ill.; W. C. Perkins, Niagara Falls, N. Y., and H. H. Smith, Conneaut, Ohio.

MATHEWS
Gravity Brick Conveyors
"THE STANDARD EQUIPMENT"

**Order Now for 1913**

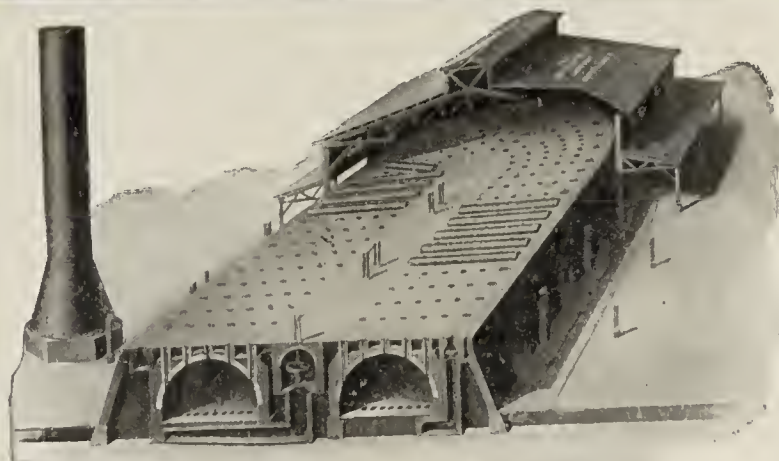
Judging from the extraordinary demand for our gravity brick carriers during the last six months, we are going to have hard work keeping up with the orders for this year. That's why we ask you to place your order early—subject to later shipping instructions. You have got to buy this equipment sooner or later—so why not sooner?

Write for illustrated catalogs and prices.

Mathews Gravity Carrier Co.

Branch Factories: { Toronto, Ont.
London, Eng.

ELLWOOD CITY,
PENN.



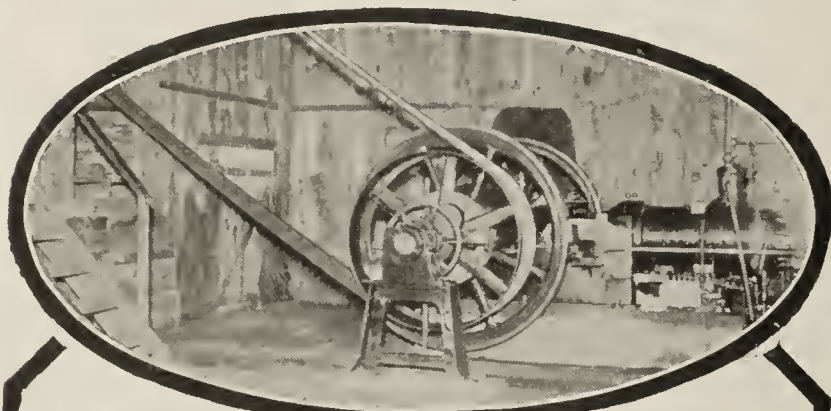
**REGENERATIVE
CONTINUOUS
TUNNEL KILN**

FOR

CLAY PRODUCTS

The Gas Machinery Co.
Cleveland, Ohio

GANDY Belts Installed When Mill Was Built—Still Giving Satisfaction



Read This User's Letter:

Joplin, Mo., April 22, 1912.

Gandy Belting Co.

Gentlemen:—We put a Gandy Canvas Belt on our main drive of our mill when the mill was erected, three years ago, and it is still giving satisfaction.

Yours very truly,

BAY STATE MINING CO.,
By F. N. Warren.

The work accomplished with a belt is the best evidence of its value.

THE GANDY BELT

has been sold for more than thirty years, and its remarkable success and present general use

IN THE BRICK INDUSTRY

are the best evidences of the service and satisfaction it would give you. When you next order belting try THE GANDY BELT—the belt with the "green edge"—that only costs you about one-third as much as leather belting and much less than rubber belting, while it does the work as well.

We shall gladly let you have samples, name of nearest distributor, etc.

THE GANDY BELTING COMPANY
732 W. Pratt Street Baltimore, Md.
New York Office, 88-90 Reade St.

"NESTOR"

SOLID WOVEN
WATERPROOF
BELTING

BUILT
especially for
BRICK PLANT WORK

WRITE FOR CATALOG JUST
OFF THE PRESS

THE AMERICAN FABRIC BELTING CO.
CLEVELAND, OHIO

THE BUYERS' DIRECTORY Of Clay Products Machinery Manufacturers

Analysts and Chemists, Clay.
Ceramic Sup. & Cons. Co.
N. Y. State University.
Raymond Co., C. W.
Richardson-Lovejoy Eng. Co.

Aerial Tramways.
Broderick & Bascom Rope Co.

Automatic Cutters.
(See Cutters.)

Barrows and Trucks.

American Clay Machy. Co.
Berg Machy. Mfg. Co.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Electric Locomotive & Car Co.
Fate Co., The J. D.
Freese & Co., E. M.
Hensley, J. W.

Illinois Sup. & Cons. Co.
Manufacturers Eq. Co.
Martin Bk. Mach. Mfg. Co., H.
Ohio Ceramic Eng. Co.
Potts & Co., C. & A.
Raymond Co., The C. W.
Steele & Sons, J. C.
Stevenson Co., The.
Taplin, Rice-Clerkin Co.
Wallace Mfg. Co.
Wellington Machine Co.

Barytes, Carbonate of.
Roessler Hasslacher Chem. Co.

Belts.

American Fabric Belting Co.
Berg Machy. Mfg. Co., Ltd.
Ceramic Supply & Cons. Co.
Chicago Rubber Co.
Gandy Belting Co.
Goodrich Co., B. F.
Imperial Belting Co.
Manufacturers Eq. Co.
Raymond Co., C. W.
R. & S. Belting Co.
Sawyer Belting Co.

Belt Conveyors.

American Clay Machy. Co.
American Fabric Belting Co.
Berg Machy. Mfg. Co., Ltd.
Bonnot Co.
Brewer & Co., H.
Ceramic Sup. & Cons. Co.
Chambers Bros. Co.
Chicago Rubber Co.
Dodge Mfg. Co.
Fate Co., J. D.
Freese & Co., E. M.
Gandy Belting Co.
Goodrich Co., B. F.
Imperial Belting Co.
Raymond Co., C. W.
R. & S. Belting Co.
Stephens-Adamson Mfg. Co.
Taplin, Rice-Clerkin Co.
Weller Mfg. Co.

Belt Dressing.

Cling-Surface Co.
Broderick & Bascom Rope Co.

Blocks.

American Blower Co.
American Clay Machy. Co.
Berg Machy. Mfg. Co., Ltd.
Green Fuel Economizer Co.
Massachusetts Fan Co.
Raymond Co., C. W.
Rodgers Eng. Co., L. E.
Sirocco Eng. Co.
Trautwein Dryer & Eng. Co.

Boilers.

(See Engines and Boilers.)
Brick-Handling Machinery.
Mathews Gravity Carrier Co.

Brick Machinery.

American Clay Machy. Co.
Berg Machy. Mfg. Co., Ltd.
Bonnot Co.
Brewer & Co., H.
Chambers Bros. Co.
Chicago Brick Machy. Co.
Chisholm, Boyd & White Co.
Eastern Machy. Co.
Fate Co., The J. D.
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Freese & Co., E. M.

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Jackson & Church Co.
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Potts & Co., C. & A.
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Steele & Sons, J. C.
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Wallace Mfg. Co.
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Berg Machy. Mfg. Co., Ltd.
Chicago Brick Machy. Co.
Chisholm, Boyd & White Co.
Illinois Supply & Con. Co.
Raymond Co., C. W.

Brick Machines (Soft Mud).
American Clay Machy. Co.

Arbuckle & Co.
Baird, Son & Co., H. C.
Eastern Machy. Co.
Hensley, J. W.
Martin Bk. Mach. Mfg. Co., H.
Potts & Co., C. & A.
Raymond Co., C. W.
Wallace Mfg. Co.

Wellington Machine Co.
Brick Machines (Stiff Mud).
American Clay Machy. Co.

Bonnot Co., The
Brewer & Co., H.
Chambers Bros. Co.
Fate Co., J. D.
Freese & Co., E. M.
Hensley, J. W.
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Steele & Sons, J. C.
Stevenson Co., The
Taplin Rice-Clerkin Co.
Wallace Mfg. Co.
Wellington Machine Co.

Brick Recutter.

Raymond Co., C. W.

Brick (Building).

Fiske & Co.
Marion Brick Works.
Purinton Paving Brick Co.
Brick (Fire).
Chicago Retort & Fire Bk. Co.
Davis Fire Brick Co.
Dover Fire Brick Co.
Elk Fire Brick Co.
Evans Clay Mfg. Co.
Evans & Howard Fire Bk. Co.
Federal Clay Pro. Co.
Maurer & Son.
St. Louis Vit. & Fire Bk. Co.

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Barr Clay Co.
Danville Brick Co.
Deckman Duty B. Co.
Dunn Wire-Cut-Lug Bk. Co.
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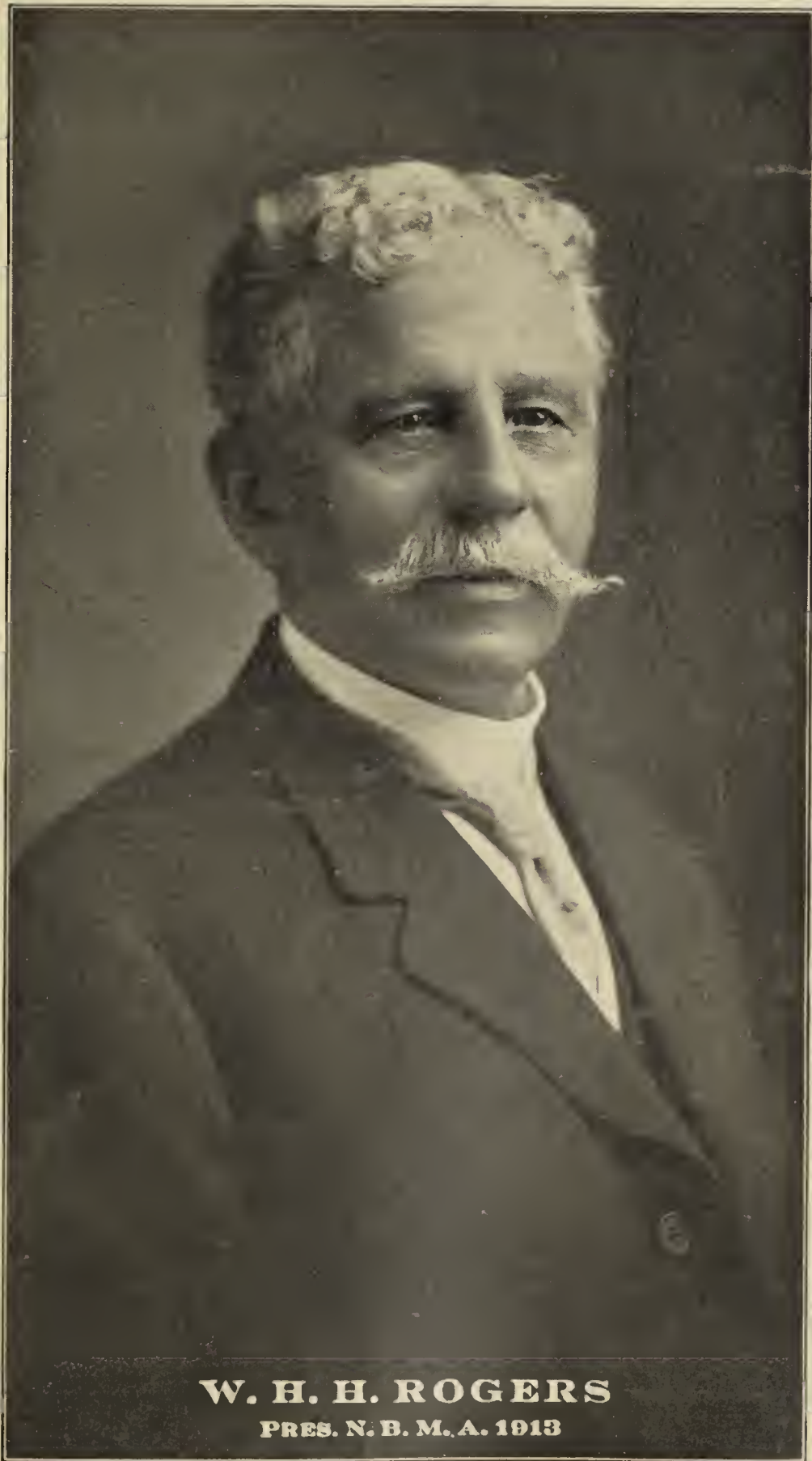
Cars (Clay).

Arbuckle & Co.
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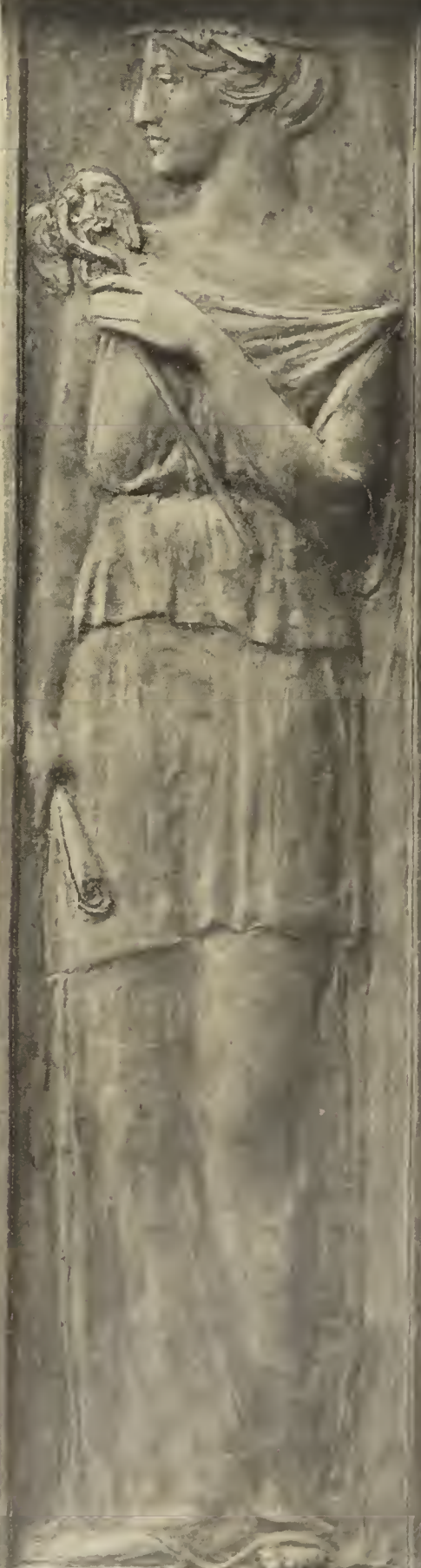
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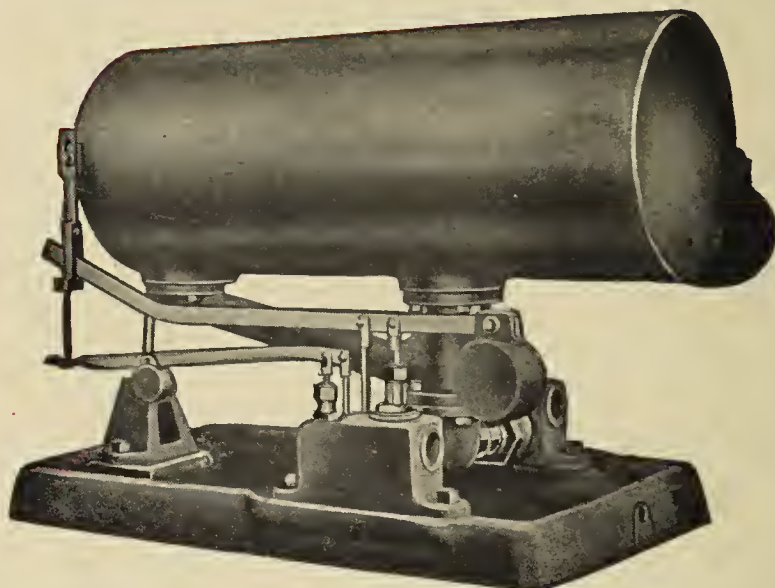
CHICAGO, APRIL 1, 1913

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(Courtesy of F. E. Saward of New York City.)

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VOL. XLII.

CHICAGO, APRIL 1, 1913

Number 7

Ohio Floods Cripple Plants

✱ ✱ ✱ ✱ ✱ ✱ ✱ ✱
DESTROY PROPERTY WORTH MILLIONS—250,000 HOMELESS

BULLETIN

(Telegram from Gov. Cox to "Brick and Clay Record.")

Columbus, O., March 31.—Your two drafts totaling \$300 just received. Thanks. Will make this go a long way in this hour's great calamity.

JAMES M. COX.

D. H. Downey, western representative of the C. W. Raymond Co., Dayton, Ohio, while in Chicago, Monday, March 31, received this telegram from his concern: "Factory not flooded. Operating full capacity by Thursday. Take orders for usual delivery."

Ohio—the very heart of the clay product industry, and Indiana, one of the three greatest states in the manufacture of burned clay, are flood-stricken.

Thousands of persons have perished in the rush of waters, many thousand others have been rendered homeless, property valued in the millions has been swept away, business paralyzed, railroad traffic tied up and starvation and pestilence threaten the inhabitants of the many cities and towns.

No one industry has suffered greater than that of the brick and clay product manufacturers of the state of Ohio where the floods were the most severe.

Meager reports from the water-covered districts give but an inkling of the disaster that has been wrought among the clay plants of Ohio.

In the vicinity of Columbus, Dayton, Zanesville, Delaware, Piqua and Youngston, where the floods were the worst in Ohio, it is believed that great damage was done to clay plants, as the latest advices indicate that these suffered alike with every industry in those localities.

The Nation is pouring money, food and supplies into the stricken territory, special trains leaving Chicago and other central distributing points every hour.

This prompt action of the people of the country was in response to an urgent appeal from Governor Cox of Ohio and President Woodrow Wilson to contribute liberally.

"Brick and Clay Record" was one of the first active

agencies in the field to raise funds. Tuesday, when the first full force of the meager information reached Chicago telling of the awful disaster, "Brick and Clay Record" headed a subscription list with \$100. Checks of

Help the Flood Victims

President Wilson and Governor Cox, of Ohio, have issued an appeal to the world for financial aid and other material assistance for the thousands who are suffering in the flooded districts of his state.

The swollen rivers, the broken dams and the overflowing lakes have swept away homes, closed factories, thrown thousands out of employment and rendered destitute untold numbers of men, women and children.

Clothing, food, money, tents and medicine must be furnished them with a lavish, unselfish hand. There must be no stinting. There must be no hesitancy. The situation is acute. As brother to brother, as man to man, we must hearken to this call for help.

And Clayworkers of the Nation, it is particularly appropriate that you send your mite, for Ohio is the greatest clayworking state in the Union and among those who are NEEDING aid are clayworkers like you.

"Brick and Clay Record," as a representative journal of the industry, joins with Governor Cox in this appeal for aid and asks that you send whatever you feel you are ABLE to give to this just cause IMMEDIATELY.

Every one of "Brick and Clay Record's" 7,000 readers is a recipient of this urgent appeal. One single dollar will do much to relieve the suffering and aid the starving. Seven thousand dollars will be a Godsend.

Whatever your mite is, send it. It is not so much WHAT you give but the SPIRIT in which you give it and the SPEED with which it is sent.

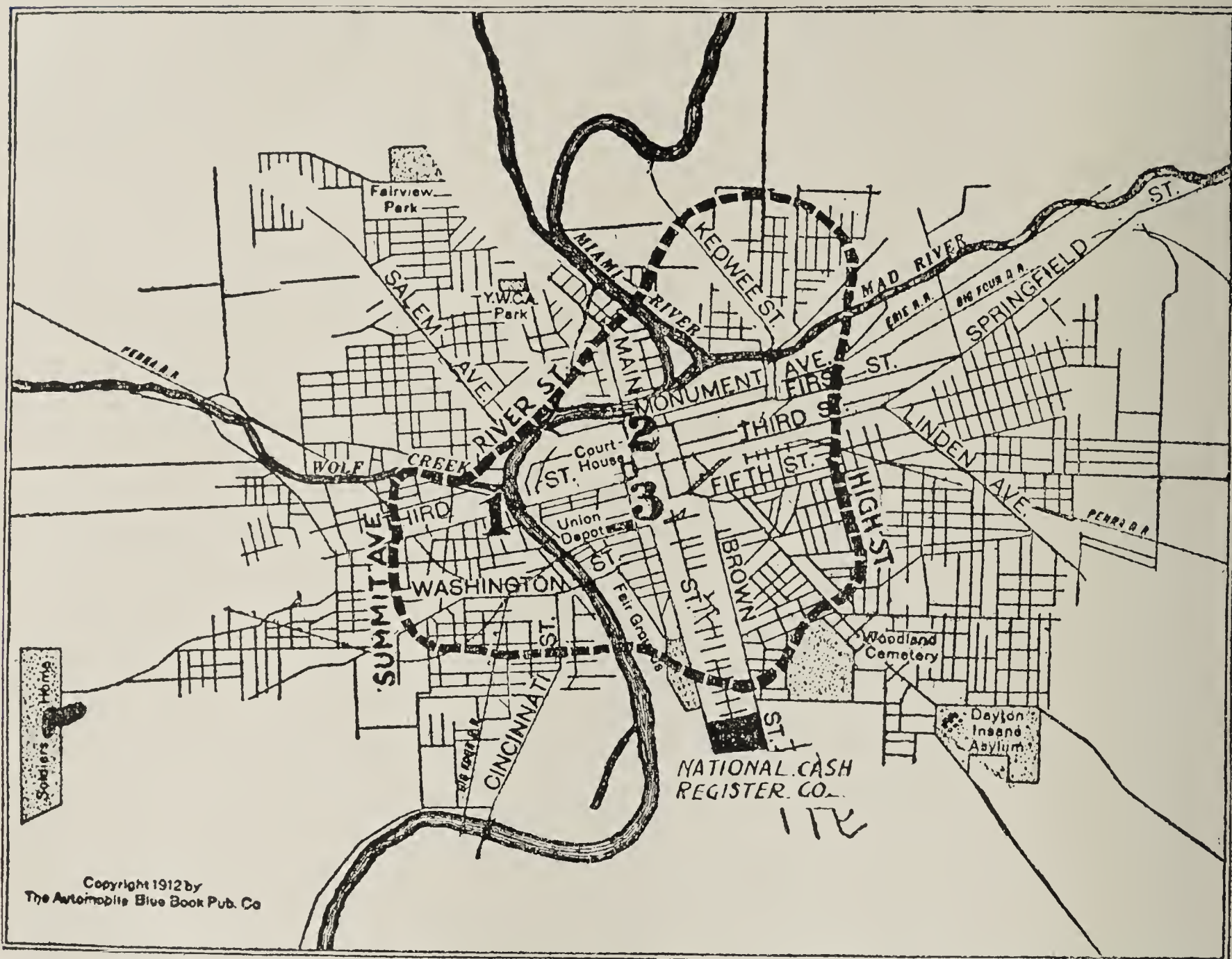
It is your one great opportunity, clayworkers, to show to the world that your industry is made of men who respond to humanity's call. Seize it!

Circulate this pamphlet among all the clayworkers in your plant. Accept 10c or \$10. Send the amount by first post to "Brick and Clay Record," 445 Plymouth Court, Chicago, and the same will be dispatched immediately to Governor Cox in the name of the Clayworking Industry of the United States.

The names of all contributors to this laudable fund will be printed in the April 15 issue of "Brick and Clay Record." Be sure that YOURS is among those who sympathize with the many thousands of homeless and destitute in Ohio.

BRICK & CLAY RECORD,

Map Showing Flooded District at Dayton, Ohio



MARKS LIMITS OF FLOODED DISTRICT.

- 1 - THIRD ST., WHERE FIRST BREAK IN LEVEE OCCURED
- 2 - MAIN ST., WHERE SECOND BREAK IN LEVEE OCCURED
- 3 - BUSINESS DISTRICT. SCENE OF FIRE

similar amounts contributed by the recently organized secret society among the clayworkers—the Ancient Order of Chaldeans, the Chicago office of the American Clay Machinery Co., the Hydraulic Press Brick Co. and the Wisconsin Lime & Cement Co., totalling \$500, were dispatched to Governor Cox.

Following this a circular, a copy of which heads this page, is being mailed, as this issue of "Brick and Clay Record" goes to press, to every one of the 7,000 readers of the magazine asking them to rush contributions. No mite is too small—none too large.

On Dayton the blow fell the hardest. For several days the residents of the city were cut off from the rest of the world, and even at this hour it is impossible to estimate the exact loss of life.

First reports placed the number of those that had perished at 5,000. Later, as the waters began to recede and rescuers could reach the heart of the city, it was shown that these estimates were exaggerated and the dead probably will not reach much more than a few hundred.

Early reports stated that the brick machinery manu-

facturing plant of the C. W. Raymond Co., of Dayton, had been destroyed, but as telegraphic communication with the city was restored partially these reports were proven to be false and aside from the inconvenience naturally attendant to a disaster such as this, the Raymond company was not crippled to any extent.

Telegrams to the number of two score or more were sent out by "Brick and Clay Record" last Tuesday, these being addressed to brick machinery plants located in the flood-stricken district. The messages inquired as to whether the flood had damaged their plants or not and offered whatever assistance the magazine could give.

The crippled telegraph and telephone lines has prevented many of these from replying, although information brought from the stricken cities by refugees indicates that little damage was done to the machinery plants, although a number of brickyards are believed to have been swept away in certain localities.

The following telegrams were received Saturday as this issue of the magazine went to press:

(Continued on Page 545)

N. B. M. A. May Meet in Cleveland

SENTIMENT FAVORS OHIO'S METROPOLIS, ALTHOUGH OTHER CITIES BID

The continuation and conclusion of the stenographic report of the Twenty-seventh Annual Convention of the N. B. M. A. is given below. With the exception of Prof. Orton's paper on the History of the Association, all the papers unpublished in the March 15 issue of this journal are given herewith. Prof. Orton's paper is printed elsewhere in this issue.

Illustrated from Photographs

It is barely possible that the twenty-eighth annual convention of the National Brick Manufacturers' Association will be held in Cleveland, Ohio, sometime in February or March of next year. This is not based on any authoritative information, because the Executive Committee determines this matter absolutely, and this body has not held a meeting to discuss the subject, nor will it for several months.

The statement, nevertheless, has some reasonable basis for its existence, as it is made on the expressions of various officials of the association who committed themselves during the Chicago convention a few weeks ago. Secretary Randall, for instance, when asked what city he favored, declared that he was partial to New Orleans, and to emphasize that sentiment wore a New Orleans button, but he added that he realized New Orleans was a little off the center of the clay products population, and that possibly Cleveland or some other Central West city would please the greatest number.

Secretary Will P. Blair of the National Paving Brick Manufacturers' Association, and also a prominent member in the N. B. M. A., was very much impressed with the idea of choosing Cleveland. Mr. Blair has his headquarters and residence in Cleveland.

Third Vice-President Deckman, also a Cleveland man, naturally may be expected to use his influence for his home city.

Thursday, the second day of the twenty-seventh annual convention of the National Brick Manufacturers' Association, was the busiest of the three-day session. Practically all the papers that were scheduled were read on that day.

The fire waste of the nation and its meaning to the clay product manufacturer, practical cost accounting systems, the question of salesmanship, short-cuts in manufacturing, industrial insurance and a number of other subjects came up for attention by men who are recognized as authorities on the subjects given them. These were freely discussed and many excellent suggestions came from this feature of the program.

Prof. Bleininger, Prof. Orton and others equally as prominent in the technical world, were on the program and delighted the hundreds who heard them.

In the March 15 issue of "Brick and Clay Record" the early part of Thursday's session was reported, but as the stenographic record closed in the middle of the paper by Mr. Ernest Palmer, the entire proceedings are deemed necessary here to preserve the continuity. The report follows:

The second day of the convention was called to order by President W. H. Rogers at 9:30 a. m. Thursday.

PRESIDENT ROGERS: Gentlemen, our Secretary will announce the first paper on the program, which is No. 2.

SECRETARY RANDALL: Number 2 is the first of our regular program, and it is our intention to follow the program literally as nearly as possible.

I think this is a paper in which you will all find deep interest, and much subsequent value. "Our National Fire Waste, Its Cause and Remedy," by Mr. Doyle. Mr. Doyle, however, was unavoidably called from the city, but Mr. Ernest Palmer of the National Fire Underwriters' Association is with us, and will present us a paper on that subject.

Mr. Palmer said:

In early Biblical history you will recall that a certain man destined to be one of the greatest leaders of all time was guarding the flocks of Jericho on the edge of the desert when he was started by a burning bush.

He was startled because he could not account for fire in that place and under those circumstances. No other human being was within sound of his voice, and, although it was in Egypt, it was before the time of the Egyptian cigarette and the careless disposition of the cigarette stub. Furthermore, he had not been careless with matches.

But the fire itself—the burning bush—did not make such a profound impression upon him as the singular fact that the bush burned without being consumed, and we are told that from the burning bush Moses received his first instructions to fit him for his great task of leading the people of Israel out of bondage.

The voice of God in that instance came from a burning bush which was not consumed.

Are you disposed this morning to realize that the American people are today in bondage to a spirit of carelessness, extravagance and indifference, and that this bondage is proving harder to shake off than the bondage under which the ancient Israelites labored in Egypt? Are you disposed this morning to read the voice of prophecy in the great annual fire waste of this country? Are you disposed to heed this voice which speaks to you not through a burning bush which is not consumed, but rather through the smoke and ashes of thousands of buildings and homes which are consumed?

After all, perhaps it is the voice of God if we would but heed it. It should speak to us also through the thousands of human lives which are needlessly sacrificed every year to this red plague. The silent lips of these victims should speak with an eloquence more compelling than any you will hear from this platform today.

Fire has been a word to conjure with from the beginning of the world. It is one of the great mysteries of nature. We find in history and in the literature of all peoples numerous instances of its use by the gods, both to punish and to benefit mankind.

We know that in our present day civilization it appears to be man's willing slave, but we are now to discuss for a few moments the cases where it has proved to be man's vengeful master.

The national fire waste is so tremendous that we can almost imagine it leaves a trail of sparks and cinders across the heavens as our old world wanders on its way, perhaps deceiving the people of Mars into the belief that a new comet is amongst them.

But let us leave the figures of speech for a while and, backed up by the cold figures of reliable statistics, let us look, first, at the national fire waste as it actually exists; then, second, analyze for a few moments the causes and effects of the situation, and finally let us venture a few suggestions as to a remedy.

Now, what are the conditions? Take one phase of the problem.

Our fire departments are the wonder of the world, both in the matter of equipment and in the skill of the men who operate them.



D. E. Reagan, Pres. Hocking Valley
Prod. Co., Columbus, O.



Anton Berg, Pres. Berg Mchy. Co.,
Toronto, Can.



H. H. Titsworth, President, Clay
Product Co., Chicago.

We spend hundreds of millions of dollars in an effort to put out fires and we are fairly successful at it, but we spend merely a few paltry thousands in preventing these fires before they start. Perhaps that is just an instance of American inconsistency.

You know it has been said that we Americans are the most inconsistent people on the face of the earth. We always accomplish what we set out to do, but sometimes we set out in the wrong direction.

A modern Chinese philosopher has said that the American nation spends thousands of dollars every year and sacrifices the lives of hundreds of missionaries trying to get the Chinese into heaven when we won't even let them come into this country. He says that we are inconsistent. However it may be on that point, we are certainly inconsistent in the amounts of money which we spend to put out fires as compared with the amounts which we spend to prevent them.

Let us compare Berlin, which is the same character of city with about the same population and area, with Chicago. The cost of maintaining the Berlin fire department is about \$300,000 annually—of Chicago about \$3,000,000.

I naturally hesitate to quote statistics to an intelligent audience like this. A mass of statistics goes well enough upon some occasions, but we Americans in this age of merchant tailoring are pretty apt to believe that figures usually lie (except on the beach at Atlantic City during the open season).

Then there is also that time-tried and fire-tested expression, "The devil may quote Scripture for his purpose." I can hardly be accused of that, however, for this is not a lecture on hell-fire. A man from Chicago would be no authority on that subject.

I should prefer to follow the example of that little Boston lady who was on her way to school with a bundle of books—I believe all Boston children carry books and wear glasses.

This little girl got on a street car and offered the conductor a nickel. The conductor, being one of those gracious, kindly, polite individuals who collect our fares upon the crowded city street cars, naturally take a personal interest in each of the passengers, sees that they get a seat, the proper transfer, get off at the right place and don't pay a soulless corporation too much money, said to this little girl, who appeared to be about eight years old and entitled to ride for half fare, "My little lady, how old are you?" and she looked up at him with disdain congealed in shining globules upon her pale cheeks, and handing him a nickel, said, "I will pay my fare and keep my statistics to myself!"

However, it is best that we have a few figures, showing the exact condition of things as they are.

The fire loss for the United States and Canada, as reported by the Journal of Commerce for the year 1912, amounts to \$225,320,900. We destroy more by fire than does all of Europe. Our fire loss pro rata is from six to twenty times that of any other nation. The actual combustion we indulge in is equivalent to a tax of almost \$3 per capita every year. In Italy it is 12 cents, in Germany 49 cents, and in all Europe the average is less than 33 cents.

In 252 American cities the average is over \$3. In New York there are 12,000 fires each year, and in London, which is over twice as large, there are fewer than 4,000.

Why, in this country a city of half a million people feels in luck to wind up a year with less than five million fire loss. A city of the same size in Europe feels that it has been stricken for its sins if its fires aggregate more than fifty thousand a year.

In the group of eleven cities having a population of 400,000 or over, St. Louis had the largest per capita loss, with Boston second, while Chicago was third, with a loss of \$2.59 per capita. Baltimore, which received a salutary warning from its conflagration in 1904, made the best showing of the cities in this group, with Cleveland next. The average per capita loss of this group of the eleven larger cities is \$2.27, which is thirteen cents higher than in 1910. (These figures were compiled in 1911.)

The average daily loss throughout the whole country is more than one-half million dollars. We have something like fifteen million buildings in this country, and we clap our wings and crow vociferously about the vast amount of building that we do and our great building booms, and imagine that we are adding wonderfully to our real property.

The fact of the matter is that we have to. If we didn't have a building boom every so often, we would soon be living in caves and forests. We burn down now about one-third as much as we build anew each year.

Every week in the year we burn up three public halls, twelve churches, ten schools, two hospitals, two asylums—don't try to remember all of these or you may be in the next one that burns—two colleges, six apartment houses, twenty-six hotels, three department stores, two jails—which could perhaps be filled with incendiaries if all states had good fire marshal laws—140 flat buildings and about 1,600 homes.

Now have any of these figures stuck in your minds, or do they merely represent to you a certain manner of speech of the speaker who must needs take up some time by telling you something you don't know in order to flatter you into remembering a few things that you do know, and getting you to act intelligently upon them?

In any event the figures are there so that he who runs may read. The great trouble with most of us is that we read them, and then run away from them and what they mean to us as individuals.

Sometimes, of course, it is difficult to understand them and to make any definite personal application of them, especially the per capita statistics.

As a Socialist speaker in the last campaign said, "You have all heard that the secretary of commerce and labor has just issued a bulletin, proving the amount of money in the savings banks of this country equals \$23.44 per capita. Friends and fellow citizens, don't be deceived. All the money that you and I have in the savings banks is not per capita—it is perhaps!"

However, if it is possible, I hope that you will remember some of these statistics that I have given you.

So much, then, for conditions as they are.

Let us briefly consider the cause and effect of this condition.

The excessive difference between the fire waste of Europe and that of the United States is caused by—

First, the difference in the point of view and responsibility of the inhabitants of Europe and those of the United States.



S. Weidman, Sec. Wis. Clay Mfg. Assn.



Geo. M. Raymond, Gen. Mgr. C. W. Raymond Co., Dayton, O.



A. W. Aylesworth, of the Bonnot Co., Canton, O.

Second, the difference in the regulations governing hazards and hazardous materials and conditions, and in the enforcement of such regulations.

Third, the difference in the construction of buildings.

Over half of our fires are due to plain carelessness, and the feeling that so much waste is inevitable. It is simply a part and parcel of our present day American extravagance. It is being thundered from hundreds of pulpits each Sunday, and magazines are full of it, but it is difficult to see that any appreciable dent is being made in this evil.

Now, I don't want to pose as saying that all fires are due to carelessness, and I am willing to admit with the best of you—and with the worst of you—that some fire waste is inevitable, but I also agree with that old maid who said, "Some things are inevitable, but sidewhiskers are a man's own fault."

Now, part of the fire waste is inevitable, I will grant you that, but over half of it could be prevented, if we would only wake up as individuals to what it means, and yet we let it grow to despoil the landscape just like these whiskers.

"What is everybody's business is nobody's business." This might well be hung as an epitaph over the failures that have marked fire protection and prevention efforts in the past. It is the trouble with the fire prevention movement of today. The property owner does not properly protect his risk because he thinks he pays the insurance company to do it, the insurance company is not so greatly interested as a business proposition because it is ready to charge for whatever hazard exists; the city and state officials too often feel that fire protection is a private business matter with the responsibility divided between the insurance company and the property owner. The fire department officials feel that the department is paid to put out fires after they have started and not to prevent them. In the publicity meetings on fire prevention and protection, even after enthusiasm and interest have been worked up, the very people who probably talked the loudest at the meeting think it is a "good thing" to help along, give it their moral support—and do not go back to their homes or places of business and make theory practice. Fire prevention and protection are the great American shuttlecock, and as a consequence we have the appalling fire waste.

Blames Much to Common Match.

Paternalism in Europe has cured these evils. We of America decry paternalism and centralized authority. We shout from the housetops, "Let the people rule." Fine! But who are the people and why don't they rule?

You are the people—perhaps you do rule in your cities. Where do you stand on this question of the fire waste? And have you been able to perceive a public opinion under way to correct it?

Another cause of this great fire waste is our wrong economic attitude.

We seem to think that if property is covered by insurance that there is no loss.

We must come to the general realization of the fact that property destroyed by fire is gone forever, and an absolute waste of so much of the economic forces of the country. This appalling waste has not a little to do with the present high cost of living.

Now, take the case of life insurance.

Simply because a man has his life heavily insured, even for

more than it is worth to himself, his family, his friends or the community, he sees no reason why he should be careless of his life. He knows that when his life is once gone that is the end of it; that insurance is not going to bring it back.

Now, in one way the two situations are analogous, and yet we are more apt to be careless of our property if we know it is well insured.

Get right on the economics of the fire waste!

Perhaps there is no better illustration to use in closing this phase of our discussion of carelessness and extravagance than to give you a few statistics about matches.

You know we Americans use more matches than all the rest of the world combined, and it goes without saying that we are more careless with what is left of them after we use what we want than anybody else.

Ten million matches are struck every second. Why, we Americans leave matches on the bookcase, on every table, in every pocket of our clothes, in the wardrobes, within reach of the children, on the chairs—why, as a matter of fact, if we wake up in the middle of the night and put out our hand and don't find a match, we are offended!

Now, I am not asking you to give up matches altogether, but simply urge you to be a little more careful, and also to use the less dangerous kinds.

Have you heard the story of the young newlywed who decided to give up matches of all kinds in order not to endanger the life of his child? That is a strenuous proposition, and I wouldn't recommend it.

The man I speak of will go down in the history of the fire prevention movement as the author of that famous ballad entitled, "We feed our baby garlic so we can find him in the dark."

But I hold no brief for the commission merchants! I simply urge you to use safety matches and abolish the strike anywhere variety.

Most great economic evils cannot be cured by legislation as such, although they can be greatly curtailed. European laws on the subject of fire waste and fire dangers are so much different from ours that they are worthy of mention at this time.

In Europe a man who has a fire has something to explain to the authorities. A fire that spreads beyond the premises in which it started inflicts a penalty upon the owner of those premises.

We have a start in this country in our fire marshal laws. Many states have them and they are being well enforced, but on this big question of responsibility we have no satisfactory body of laws.

We must get away from the idea of "sympathy" for the man who has a fire, especially if it goes beyond his walls—some day we should be able to fasten some legal responsibility there.

I would advise you all, however, to look up the fire marshal laws in your several states, become familiar with their provisions and enforce them against your careless and criminal neighbors. Remember that a law is of no use unless it is well known by the people. In the last analysis all laws are enforced by the people and not by the executive.

An instance of this is the Sherman anti-trust act, which has been "the mysterious stranger" for years. No one knows just what it means or why it was enacted, and least of all its full force and effect. One of the new Democratic congressmen from



T. P. Cuthbert, of the Fallston
Brick Co., Fallston, Pa.

the south was asked on the floor of the House where he stood on the Sherman act, and he replied that the only Sherman act he really knew anything about was "Marching Through Georgia," and that he didn't think those old Civil War questions should be brought up in the Congress of the United States at this time when the seeds of discord had been so effectually buried.

And so I urge you not to feel that legislation will cure every evil, but when we have some good law such as the fire marshal law, learn about it and use it to the best advantage.

So much for the difference in the point of view and the difference in enforcing the prevention regulations.

Lays Some Blame to Buildings.

The third cause of the contrast between Europe and the United States is the difference in the construction of buildings.

If any of you want a task of some difficulty, suppose you try to codify the jumble of insufficient and inefficient state and municipal laws respecting the construction of buildings.

We have every variety somewhere in the country, and in many places you will find the typical American condition of careless indifference and inefficient enforcement of even such laws as they have.

Provision for fire control could be and should be incorporated in all building construction. There is no question but that the technical information and experience of this nation is ample to guide the public in reducing the fire danger, if they would only understand and use it. We must create a public disposition to study and to get enacted and enforced a rounded program of uniform legislation on this subject.

There are two reasons for constructing non-combustible buildings. One is that they are less apt to burn, and the other is that they are less apt to set fire to their neighbors. Twenty-seven per cent of our fire loss is due to fires spreading beyond the walls in which they started.

In the city of Vienna, Austria, it is said that in two hundred years a fire has not burned beyond the building in which it originated. Can you imagine that possibility in any American city? If it were true, Mrs. O'Leary's cow would have something to kick about!

We Americans get a good deal of comfort out of the phrase, "The fire was confined to the building in which it started." That condition should be the rule and not the exception.

It has been said that in America only one building out of every thousand is even moderately fire resisting. This condition exists in a land where fireproof construction has attained the highest perfection.

If any of our large cities had spent one-half of what their fire departments have cost them in the way of better construction of their buildings, the greater part of those cities today would be indestructible.

Our public, however, has too long been accustomed to wood and to fire. In pioneer times—and even yet in some parts of this country—there was some sense in using wood. It was the only thing available, but today its use in our cities assumes the role of a bad national habit, and, like all habits, it is hard to overcome. As a matter of fact, wood is now one of the highest priced building materials.

People are gradually being taught that metal and stones and brick and cement and marble and plaster can be made into just as beautiful forms as can wood. They must also be taught that among these incombustible materials to which we referred distinctions are inevitable.

Of course, the ideal material for resistance to fire is burnt clay. Brick walls and terra cotta trimmings best stand the test and are the least damaged in conflagration or ordinary fire.

The modern steel frame building to many present day Americans represents the very epitome of endurance and resistance to time and the elements, but every particle of that steel must be thoroughly and well protected against fire, and there again burnt clay is the most dependable medium. Brick or hollow fireproofing best serves that purpose.

It is easy enough for us to say these things, and it is easy enough for us to understand them and to know that they are true, but it is a difficult matter to get the idea of fireproof construction abroad in the land so thoroughly that the people will demand it of their neighbors.

The city councils throughout the country approach the subject of building ordinances either with indifference, or with fear and trembling and when they do get an ordinance it is very seldom that public opinion will sustain it thoroughly.

We all delight in the word "fireproof," and we use it glibly. You never heard of a hotel that was not advertised as fireproof or a storage warehouse, or any other building which caters to the general public. But the word fireproof in those cases means only so much as its author at that time wants it to mean.

The International Association of Building Commissioners suggested that all buildings be labeled by the municipality as being fireproof, non-combustible, ordinary or dangerous.

We have a national pure food law, which requires a man to tell the truth about his product, that is, to tell what is in the product. We have not progressed far enough to make him tell the truth about the product. He may still say that it is an "absolute, sure cure for consumption," etc., but he must tell what it is. Perhaps the citizens of our country need a Dr. Wiley to prescribe building regulations and a labeling system.

We have now seen what the national fire waste amounts to. We have seen in some measure why it exists, and we come finally to the remedy. This has been foreshadowed and in fact, partly answered already, that is, we must have better buildings. How easy that is to say, but echo is apt to answer: "What are you going to do about it? How are you going to get them? What is the first step?"

Seeks to Give a Remedy.

I always feel some hesitancy in naming a cure for this great evil—the fire waste of the United States. It is so vast and tremendous that it almost seems presumptuous to name even any series of things which will be able to effect a cure.

There are so many different elements to be considered.

I am reminded of the story of the sick Scotchman who languished slowly unto death in a hospital far from his native land. They had tried every possible thing, but finally were about to give it up, not really knowing what was the matter with him or how to cure it.

Finally the doctor suggested: "It won't hurt, anyway. Let us get that bagpiper in the next village to come over here and play him a few tunes of his native land." So the nurse sent for the bagpiper, and he played old Scottish airs upon that weird and awful instrument. The next day the doctor said to the nurse, "How is our patient, the Scotchman?" and the nurse replied, "Doctor, he is very much better." "Well, that is fine," said the doctor. "I am not so sure about that," remarked the nurse; "all the other patients are dead."

And then again there was that small town in western Pennsylvania which had suffered from a number of serious fires during the winter, and in several instances the local fire department had been handicapped by finding the hydrants frozen up. Following a disastrous fire, which got beyond control, owing to this fact, one of the city fathers proposed at the next meeting of the city council that the chief of the fire department be required to personally inspect every hydrant three days before each fire.

Now, I am going to surprise you, therefore, by offering but one additional suggestion as a possible remedy for this great and growing disgrace to our nation. I am not claiming for it any immediate and startling success, and I don't know that I can tell you just how you may lay your hands upon it.

The matter of this national disgrace, the national ash heap, or the red plague, or by whatever name the subject under discussion is known, must, of course, be given wide publicity, in the public press and from the platform, but these things are but means to an end. They are themselves not cures. They are directed towards the individual—an attempt to arouse in him a spirit of personal responsibility, and that, gentlemen, is the one thought I want to leave with you today.

A city, a state or a nation is made up of individuals, and until we can get the people to think for themselves upon any great subject, we shall have no general intelligent action upon that subject.

We must realize that charity is not the only thing that begins at home, and may I, without seeming to be impertinent, ask how many of you men have done any personal work along the lines of fire prevention—except to make brick—or, rather,



L. L. Stephenson, Birmingham, Ala.

Charles H. Frost, Los Angeles
Pressed Brick Co.W. P. Grath, Ill. Supply & Con. Co.,
St. Louis, Mo.

more especially along the lines of eliminating the great American habit of carelessness and indifference?

Have you done anything at home or in your store or attempted to teach your children or your employes of the danger of fire through carelessness? How many of you feel safe at this moment regarding conditions in your home? Suppose a fire should break out in your home, is there any means at hand for extinguishing the small blaze? Do you all live in brick houses?

Have you ever given thought to these things? Or, suppose tomorrow morning at your store a cry of fire is heard, have you taken the proper precautions to safeguard the lives of your employes, or are you going along upon the presumption that the fire will always be somewhere else?

And now, forget for the moment your own personal interests, such as your own family, your own property, have you ever stopped to consider that possibly you are endangering the lives of your neighbors? In other words, have you ever felt any real personal interest in this matter, aside from the one point of proper building construction? You must begin farther back than that.

We cannot expect to teach one thing and practice another. We must get this idea of personal interest and responsibility ourselves before we can hope to influence our neighbors or our community.

Says Cure Lies in Education.

The correction of the fire waste is a matter of education along the several lines I have mentioned. It is often difficult for us to see beyond our own immediate interest.

In a small Illinois town a little girl about four or five years old was attracted from her front yard by a group of passing children, and she followed them several blocks away to a Sunday school gathering in the church. Her mother missed her very shortly, and at once saw visions of kidnappers, street car accidents, and any one of those hundred and one things which bring terror to a mother's heart, and she immediately started friends, neighbors, and police on a search for little Daisy Bell.

One of the neighbors thought of the Sunday school gathering and that the child had probably been attracted there, told the minister, and he announced from the pulpit to that group of several hundred children: "Daisy Bell is lost. If anyone sees Daisy Bell send her to her mother." But little Daisy Bell made no reply.

Finally her mother came, and thought that she would look herself among the group of happy children for missing Daisy Bell, and so found her gleeful and happy among the throng.

The scene which ensued can best be imagined that described, but when the mother's first burst of joy had been calmed, she said, "But, Daisy Bell, didn't you hear the minister call your name? Why didn't you answer?" and the little girl looked up at her mother and said, "But, mamma, I wasn't lost. I knew where I was."

How many of us are going through life with that same attitude, thinking that we are safe because we see things with our limited vision, caring not for the fears of others, much less for their property or their lives.

Would it not be better, and do you not agree with me that if you can implant in the minds and hearts of the people of this country the elemental proposition of personal responsibility that we will have gone a long way in solving the problem we

have been discussing today? An imperative demand for fireproof buildings would follow in logical sequence.

Forget, if you choose, all the figures I have given you, but remember that here we have a great economic problem and that you are not as good a citizen as you ought to be until you do something about it.

You have heard of the famous General McGinty. McGinty had ten thousand men. He marched them up the hill and then—he marched them down again. Now, that was magnificent! But it was not war!

Now, what we want in this fight against the national fire waste is not a mere parade or a sham battle. We want action, and what good does it do if we parade before your minds ten thousand facts and figures, showing the tremendous fire waste of this country and the criminal uselessness of it, if all you do is gaze a while and say, "Isn't it too bad?"

What good does it do to show the people of this city ten thousand uses of your fireproof materials if all they do is gaze a while and then return to the dead level of indifference?

Gentlemen of this convention, I trust that in this great movement of reducing the national fire waste we are getting to the point where the people of this country will not march up the hill simply for the sake of marching down again.

(The author is indebted to other writers and speakers on this subject, for some of the material used in this paper.)

CHARLES J. DECKMAN: Mr. Chairman, the Society for Testing Materials, intended to take up the question of testing materials, and, unless the building and other brick interests of this Association have some representation before them, their interests may materially suffer. Therefore, I move you that this Association take out a membership with this society, and that a committee of three be appointed by the chair to act in conjunction with this society on this question.

(The motion was duly seconded and unanimously carried.)

PRESIDENT ROGERS: I would like to thank Mr. Palmer for that splendid address. I am sure it has been thoroughly appreciated and will prove of benefit to our organization, and through us to many others. The Secretary will read the next number on the program.

MR. READ: Before passing to that I would like to make a motion that the remarks of our President be adopted as the sense of this convention, and a vote of thanks be extended to Mr. Palmer for this talk.

(The motion was duly seconded and unanimously carried.)

PRESIDENT ROGERS: What is the next number?

SECRETARY RANDALL: I am really sorry that there is not a little discussion, at least, on the paper upon



Chas. Bray, Western Clay Mfg. Co.,
Helena, Mont.



H. J. Votaw, of the J. D. Fate Co.,
Plymouth, O.



A. F. Schultz, of the A. L. Schultz &
Son Co., Chicago.

Fire Waste. Personally, I believe it is one of the most important papers, and one of the best presented to us on any at this present convention.

I suppose, of course, you can take that paper as it is published in our proceedings and use it to very good effect at home; but the point which he mentions, and the appeal he makes for better fire protection in this country ought to touch the hearts of every clay man, if no one else, in the land.

If you are not inclined to say something on this speech, we will pass to the next.

R. C. PENFIELD: Speaking of the Fire Waste proposition, and the regret on the part of the Secretary that nothing was said on the subject, I am tempted to add just one word to it now. One of the purposes of the Clay Products Show was to demonstrate that a comparatively cheap house, built of brick and roofed with tile, could be constructed.

After the show last year in this city—possibly somewhat as the direct influence of it, the fire limits of the city of Chicago were extended, and thirty-five square miles of territory added to the fire limits of this city, which before was entirely out of it, and in which frame and combustible structures could be erected.

One of the objections raised to a still further extension of the fire limits at that time was the hue and cry that came up from the aldermen in certain districts saying that the poor people would be prevented from owning and building their own homes if this fire-proof law went into effect, and they argued it out in the Council, claiming that the enormous cost of construction was a hardship on these people.

Well, one of the city papers here took the question up—the Examiner, and it has given a wonderfully wide publicity to the fact that brick houses costing around \$2,000 could be erected and cited the fact that one had been built at the Exposition. Two of these, as a matter of fact, were constructed in this city at a cost of \$2,100 each, and the demonstration that a moderate priced brick house could be constructed, will make possible the entire elimination of that hue and cry that the poor man can't have his own home.

A proper education which should come from following up the matter which we have heard here, would make it impossible for a man to build a fire trap, even if he could build it a few dollars cheaper. It ought to be against the law, and against public policy to allow such a thing, and I believe the time will come when it will be. Every brick manufacturer in every town in the country, by properly organizing, can help carry on this good work. One of the results that has been called to our attention and can be used in this connection, is that the bricklayers all over the United States are willing to help in this work; and there are many other ways in which it can be promoted. (Applause.)

PRESIDENT ROGERS: Are there any others wishing to discuss this question; if not, we will proceed to the next.

SECRETARY RANDALL: Mr. Ittner was going to say something.

ANTHONY ITTNER: Mr. President, what I wanted to say was this. The speaker asked what have we done. I listened to a lecture by a Mr. Wentworth last May in New York City. He came before the National Association of Manufacturers to speak to us upon this subject, and his lecture, like the one that we have just listened to, was very interesting and instructive. Now, the question is whether after you have listened to this lecture you will let that be the end of it or not.

Mr. Wentworth went a little further than the gentleman who has just addressed us. He spoke about the old style match, the same that has been spoken of here this morning. He spoke of how dangerous it was, how it was carried around, and allowed to lay around loose, just as the speaker mentioned. If a man got up in the night time and wanted to light a cigar and reached his hand out for a match and could not get it, he was not disposed to repeat the Lord's prayer.

This Mr. Wentworth exacted a promise from us, that when we went back to our homes, we would dispense with the old style match and get the safety match. I was the first one to get up from my seat. I was about as close to the speaker as I am to the speaker's table now, and I promised him when I got back home (for his

(Continued on Page 497.)

Housing Plan Boosts Brick

INTERNATIONAL EXHIBIT SHOWN IN MANY
CITIES GIVES PUBLICITY TO BURNED CLAY

The "Housing Exhibit," which was held in Chicago, during the week from March 17 to 22, was an "eye-opener" to many citizens, who had not before given the housing subject serious consideration. This exhibit, which occupied six floors of the Chicago City Club House, was largely attended by architects, builders, home-builders and owners and it was a revelation as to the deplorable housing conditions which prevail in the poorer quarters of large cities, such as London, New York and Chicago.

An important feature of the exhibit was the plans submitted by thirty-one architects from all parts of the world, for ideal suburban residence community, the first prize being awarded to Wilhelm Bernhard, a Chicago architect, for the model treatment of a quarter section of land. His scheme was to eliminate the flat building by the erection of individual houses of various types and sizes. According to his plan, not more than 2,800 people should populate a section of 160 acres.

In the housing exhibit, many examples were shown of model city planning, one being the famous industrial town, planned by Pullman. The scheme, among other admirable features, provided for brick construction, and the fact that the dwellings are in good repair after thirty years' hard usage, with little spent for repairs, is evidence of the wisdom of his choice of materials.

In examples of recent improved types of dwellings for workmen, the German type was of brick construction, plain but substantial, with utility and endurance as the dominant feature, while the French type was a dainty little three-room affair of stucco on the bungalow order, which looked as though it would only last a season or so.

In the display of family residences, in low cost houses, frame predominated, while in the highest cost residences, brick predominated, and while over 50 per cent of the frame houses cost less than \$2,000—50 per cent of the brick houses cost from \$2,000 to \$3,500, which is a small difference in original cost, when the maintenance, insurance and repair bills are considered.

The exhibit of the Boston Dwelling House Co., showing the model houses being constructed at Forest Hill, which was described by Mr. Joslyn and again in this journal in the March 15th issue came in for much favorable comment.

The plans for houses at Guilford, Baltimore, to be built by the Roland Park Co., showed how a fine type of residential suburb could be artistically created by the use of brick, for from the outer wall with its ornate gateway and the charming little station to the largest and most imposing mansion, brick was the predominant material.

Attractive small two-story brick houses of 5 to 7 rooms, renting for a moderate sum, occupied a prominent position in the display of the National Cash Register Co., the beautifully kept flower gardens in the back yards showing the results of this company's well-known efforts to improve the housing conditions of its employees at Dayton, O.

In the foreign exhibits, "A dream that came true," at Letch, England, a model dwelling community, founded on Ebenezer Howard's "Garden Cities of Tomorrow," showed wide tree-lined roads, lined with picturesque houses in which brick predominated almost to the exclusion of other materials; all houses having garden spaces; hedges and vines adding an attractive note.

The foreign exhibits all showed the result of co-operation

and co-partnership methods and the Liverpool display gave ample evidence of the magic which has been wrought by the municipality in transforming one of its worst slums into an ideal dwelling district.

SECOND GENERATION IN EVIDENCE.

Descendants of "Fathers of the Industry" a Feature of 1913 Convention.

While the prevailing spirit of harmony was a marked feature of the recent national conventions of the various organizations of the clay industry, another feature, equally interesting and encouraging, was the presence of so many of the second generation of brickmakers and their active participation in the proceedings indicated that the noble work of the "old guards" whose names have become household words with members of the industry will be perpetuated by the younger generation, and it must be with a genuine feeling of satisfaction that those who have watched the growth of the industry from its infancy; have labored long and faithfully for the cause, can feel that upon their retirement from the active management of the business, their mantles will fall onto youthful shoulders, whose strength and vigor, supplemented by technical training, gives a full warrant of their ability to carry forward the work so well established.

Among those of "the younger set" who were especially active about convention headquarters was to be noted Marion W. Blair, of Kushequa, Pa., son of Secretary Blair of the National Paving Brick Manufacturers' Assn., one of the old school who gained his experience in the practical school of experience in the clay plants at Brazil and Terre Haute, Ind.

Howard Frost, of the Los Angeles Pressed Brick Co., Los Angeles, Cal., is carrying on with credit the work which has fallen to his lot by the withdrawal of his father, Chas. H. Frost, from the active management of the business. The elder Frost, it will be remembered, first engaged in the brick business in Chicago in 1877 and later, in 1887, founded the Los Angeles Pressed Brick Co., at Los Angeles, Cal., which has made great strides to progress, the enterprise of the firm being shown by the fact that it brought an extensive display of its varied products 2,300 miles to the Clay Show.

It is a matter of pride with Anthony Ittner, of St. Louis, Mo., that veteran of the industry, whose counsel and practical suggestions have been a feature of the national conventions for many years, that his son, Warren W. Ittner, is following in his footsteps in his chosen calling. Mr. Ittner, Sr., while of the old school, is progressive and aggressive and believes in adopting any new methods which are for the betterment of the industry and, in keeping with this idea, educated his son in one of the best ceramic schools in the country—at the University of Ohio. Mrs. Ittner has the distinction of being the first woman attendant at the N. B. M. A., conventions and it is but natural that the son should be brought up to honor and respect the industry which is so near to the hearts of his parents.

H. C. and J. P. Penfield, sons of R. C. Penfield, president of the American Clay Machinery Co., are supplementing their college education by a course in practical business experience, under the guidance of their father, which training will fit them for the enormous responsibilities which will some time devolve upon them of carrying forward the large enterprise which their father has built up.

Chas. W. and Geo. M. Raymond have already demonstrated their ability to ably carry forward and direct the management of the extensive business which their father, the late Chas. W. Raymond, established by his energy and integrity. And so on down the line, we find many examples of the proverb, "Like father like son"; M. J. Williams and his brothers A. F. and A. J. have literally been brought up by their father, Milton J. Williams, "on crushers and pulverizers" and the well known prosperity of the Williams Patent Crusher & Pulverizer Co. is a demonstration of the successful carrying out of the "father bringing his sons up, in the way they should go."

Then there were Neil H. and M. E. Gates, sons of W. D. Gates, of the American Terra Cotta & Ceramic Co., Chicago. These young men are well versed in the terra cotta industry and the popularity of the Gates' ware is evidence of the success the Gates' family is enjoying.

Fritz Wagner, Jr., son of Fritz Wagner, of the Northwestern Terra Cotta Co., Chicago, is a "chip off of the old block," and loses no opportunity to study and experiment so as to bring out new things in terra cotta. He recently took the short course in ceramics at the Univer-

ity of Illinois, which proved so successful.

Among other members of the second generation in evidence at the Congress were: Geo. J. Potts, son of Clayton Potts, of the C. & A. Potts Co., Indianapolis, Ind.; John Berg, son of Anton Berg, president of the Berg Mchy. Co., Toronto, Can.; Herbert L. Simpson, assistant manager of the Clay Products Expo. Co., son of H. E. Simpson, of the American Clay Mchy. Co.; Arthur J. and H. H. Freese, sons of E. M. Freese, president of the well known E. M. Freese & Co., Galion, O.; Roy G. Bennett, son of F. S. Bennett, of the Wellington Machine Co., Wellington, O.; A. F. Schultz, son of A. L. Schultz, president of the A. L. Schultz & Son Co., Chicago; Chas. A. Bonner, son of the genial Chas. Bonner, of Bonner & Marshall Co., Chicago; L. G. Blackmer, son of L. R. Blackmer, who has been in the sewer pipe business for forty-seven years, and is president of the Blackmer & Post Pipe Co., St. Louis; J. E. Randall, who as the son of T. A. Randall, secretary of the N. B. M. A., has attended the conventions since he was a little boy. And so we might go on indefinitely enumerating these sturdy descendants of the "fathers of the clay industry," but enough has been said to indicate that the industry has plenty of new blood and that the younger generation are ready and anxious to put their shoulders to the wheel and push, and we consider this one of the most encouraging things to build upon, and with these young men ready to carry out the aggressive policies suggested and outlined in the way of publicity and other lines, there is no reason why the industry should not go forward confident of a glorious future.

B. B. A. Plans Big Year

An executive session of the Building Brick Association of America is to be held at no distant date and it is proposed to launch plans at that meeting which will make the organization one of the most active agencies in the clay product field.

"There was so much doing in Chicago during the recent conventions," explained a prominent member of the B. B. A., "it was impossible to expect a representative meeting of the B. B. A., and we merely contented ourselves with doing just what had to be done and decided to wait until

all the excitement of the Clay Show, the conventions and the Chaldeans had died down.

"We are not dead by any means and the small attendance at the annual convention proved only one thing, and that is, it is expecting too much to figure on four or five important organizations meeting in one city at the same time. It certainly doesn't prove that the B. B. A. is dead. We are far from that."

Following the executive committee meeting it is expected that a very aggressive campaign will be launched. Just what the work is to be has not been determined. There seems to be, however, a unity in desire that the B. B. A. shall widen its field and that it will become the clearing house for a great publicity and selling campaign that shall cover the entire country. Just how this will be done is not announced even by the most active supporters of the idea.

GIVES AWAY GENUINE STOGIES.

West Virginia Brickmaker Tickles Taste of Convention Smokers.

Charles H. Carpenter, manufacturer of the Denison Interlocking Tile, of Martins Ferry, O., made a hit when he arrived in Chicago Tuesday morning to attend the Convention at the Congress Hotel. Besides carrying a Denison interlocking tile under his arm, Mr. Carpenter also had a box of Marsh Havana Tobies, made in Wheeling, W. Va. Of course, Mr. Carpenter did not bring a million of these popular tobies with him, but when the delegates found he had some, he had to put the brakes on and only gave one tobie to each friend. John J. Moroney, of the Chicago Brick Machinery Co., fared better than anyone else at the hands of Mr. Carpenter. The "King of Ireland" was given a full box of Tobies, each one of which measured 11 inches. In fact, it was the biggest smoke at the Convention.

Chambers Bros. Co. Move to New Suite.

Because of the purchase of additional property for the proposed new Union railroad station in Chicago, Chambers Bros. Co. were forced to vacate the offices at 514 West Jackson boulevard, occupied by Elmer G. Biechler, the western representative. New quarters were secured for the Chicago office and warehouse in Machinery Hall, Washington boulevard and Clinton street, just opposite the new Chicago & Northwestern passenger terminal station. This building is devoted exclusively to the machinery trade and makes ideal quarters. Chambers Bros. Co. will occupy the new suite May 1.

N. B. M. A.—Its Field of Usefulness

By Prof. Edward Orton, Jr.

Head of the Ceramics Department, Ohio State University

The following paper was read by Prof. Orton during the first day's session of the recent convention of the N. B. M. A. in Chicago, and is a part of the copyrighted proceedings. It covers the past and present work of the Association in a very comprehensive way and points out further opportunities for activities.

One of the most interesting papers read at the recent Chicago convention of the National Brick Manufacturers' Association was that of Prof. Edward Orton on "The Field of Usefulness of the N. B. M. A." It follows:

It is easy to say that the field of usefulness of this Association is to build up the Clay-working industries of the United States. But this platitude, which no one will care to dispute, doesn't get us anywhere, for when we come to discuss how this building up process is to be carried out, there will be almost as many minds as there are men. All that I can do is to tell you as best I can how the problem looks to me.

First of all, I think a brief retrospect of the history of our organization should be taken, for a knowledge of what we have been may perhaps throw a useful light upon the question of what we shall become.

Back in the 70's perhaps—certainly in the early 80's, there were several small associations among the clay workers of the country. They were generally state organizations, in Illinois, Iowa, Ohio and several other states perhaps; possibly some local bodies were formed representing smaller districts still. Curiously enough, these organizations all represented that branch of the clay industry which would by general consent be called the most primitive—the drain-tile and common brick business. It is no affront to so denominate these industries, because they employ the least capital per plant, work for the shortest season of any, retain the fewest permanent employees, make the smallest output in total value per plant, and sell their product for the lowest price per ton, and lastly they employ few if any technically trained men in conducting their work.

These associations were all of one type. Their discussions were always upon the technical side of their business. The physical difficulties of manufacture, and in the case of drain-tile, proofs of the advantage of its use and the method of its application, constituted the burden of their song, if not their whole repertoire. Prices of product, labor rates, pools and selling agreements were not upon their programs, and if discussed were discussed between man and man, and not as a part of the business of the conventions.

The quality of the technical discussions was very elementary—it was rather an exchange of practical experiences, with but little if any exact basis for calculation or definite prescription of means for relief from troubles.

The Organization of the N. B. M. A.

In 1886, in Cincinnati, the present organization came into existence. I have no details to give of its birth, or the causes which led up to it. I wasn't there. But there are six or more present who were, and they will bear witness today to the intense enthusiasm which attended the beginning of the Association. It was as if an industry which had slept for centuries had suddenly awakened and found itself. Or perhaps the simile would be truer, if I said that it was as if an industry which had been chained for centuries had been suddenly released, for there came to this Association the warmth of affection and the loyalty of support which would have belonged to a real deliverer in times of old.

The character of this new National organization was speedily fixed. It assumed the same general role as its smaller state and local predecessors. It did its work better, because it was bigger and more representative in its membership, and because men of larger capital, larger experience, and broader preparation were attracted to it. I first heard of it in 1892, from my friend Ellis Lovejoy. It's not the first or last good thing I have learned from him, either! He said to me, apropos of the Indianapolis meeting;—"You ought to go, Orton! It's worth while! You will meet an entirely different set of people from those you see in the little state associations. They are men of means and importance in their districts, and it's

worth your time or anybody else's to go and hear their discussions."

I remember in the early meetings how commonly, surprise was expressed by speakers representing other walks of life, who came before us. They nearly always expressed astonishment at the activity of mind, the intensity of purpose, the high quality of the citizenship of our members, and most of them frankly stated that they were not prepared to see such attributes in mere clay-workers, whom people had in some way come to consider as a lowly and backward class. We not infrequently hear this idea yet from some speaker who comes before us, but that it has become rarer, and that the public has appraised the clay worker of America more nearly at his true merit, is one of the achievements of our Association. It has by its meetings, afforded an object lesson which has raised a whole industry in the social plane. It was formerly considered just a little of a disgrace for a man to go into the brick business, but no one thinks so in America today.

If our organization had nothing else to its credit, its influence in this one direction would amply justify its existence. It breathed a pride of craftsmanship, a recognition of the fundamental manhood and virility of its personnel into each and everyone of them, and while other influences were also accomplishing this same thing, the share that this association has had in it, is too important to overlook or to deny. It has virtually created the class-consciousness of the clay working industry in America.

The N. B. M. A. as an Educational Body.

I did not attend the Indianapolis meeting as I had been advised, and it was not until 1894, at Chicago, that I first attended a convention. I came with a mission. I wanted support for the establishment of a clay-workers' school. But before I had attended the last session, I awakened to the fact that I was dealing with a school, and one of no mean order. It has been said, not once, but dozens of times that the N. B. M. A. is essentially an educational organization.

Up to the very recent past, we have had in America no formally organized extension schools, i. e., schools which carry the benefits of the higher education back to the people who cannot regularly stop their work and go to school again. Such extension of educational opportunity to those who had no chance in youth, or to those who awoke too late to the value of the opportunity they neglected, is a rather new phase of education anywhere. But, now that extension schools have been organized, we begin to see that the N. B. M. A. is, in a sense, an extension school. It does just what an Extension School does or seeks to do, and although it is a purely voluntary or sporadic organization, and not connected by organic ties to any school, it is nevertheless giving to its membership about the same kind of help that the Farmers' Institute gives to the farmers, and Teachers' Institute gives teachers, etc.

The N. B. M. A., has probably succeeded as a school all the better because its members didn't call it one, or perhaps didn't realize that it was one. There comes a certain embarrassment to many men in the thought of going to school again, after once starting in practical life. They instinctively feel that a school is an institution of youth, to be set aside at maturity. They cannot realize that the best educated men are those whose learning has made them humblest, and who know that no one under the sun can be found who cannot tell them something new.

But any man, whether he be finicky about going to school or not, can learn by association and discussion, upon terms of equality, with fellow craftsmen. No embarrassment about confessing ignorance is felt on this floor, for if we tell the truth we are all ignorant together, and no one appears so much worse than his neighbor as to shame him from asking questions.

Such schools as the N. B. M. A. have their limitations as



Isaac E. Hardy, Supt. Tiffany Enamelled Brick Co., Mokena, Ill.



E. C. Kimbell, of the S. S. Kimbell Brick Co., Chicago.



G. E. Goldner, Ft. Dodge, Ia.

well as their good points. They can never bring things down to a complete or satisfactory conclusion. A subject is never discussed long enough to make it wholly clear to all. The meetings are too short or too temporary. The preparation of members to receive the information which they seek is very different, and the instruction must be conveyed in different ways and in different form to enable all to get it. In other words, we are not a graded school. We have some who need the primer, and some who need the calculus, side by side. Hence, for any given paper or discussion, there are always some who are bored because it is too elementary, or others who are annoyed because it is too technical. This condition of affairs is inherent. We must always start at about the same place, for the benefit of the beginner, for he is the one whose presence most of all justifies our association. Consequently, we can never get to any advanced position in our discussions, because we have to start too low down.

The giving of regular technical training in clay-working was not begun in America until 1894. It was made possible largely by the attitude of this association, and by the personal support of its members. As I have said before, I came here seeking encouragement in a new venture, of which I was not very sure and one which many practical clay workers did not hesitate to denounce as chimerical. I came here poor, but you sent me away rich in self confidence, in sympathy and encouragement. If your attitude had been other than what it was, it is by no means unlikely that I would have given up the project of establishing a clay worker's school, for up to that time I had heard little besides criticism and ridicule, and I needed to hear the other side. And, since that first school was established, others have come along, until we now have five regularly constituted ceramic schools, besides a number of others in which some little instruction in Ceramic Technology is offered. This Association has, therefore, a direct causative relation to the beginning, maintenance, and support of the higher technical education for the ceramic industries, as well as for the extension education which it gives in its own meetings.

The N. B. M. A., as an Educational Body.

At the Cleveland meeting in February 1895, Mr. Willard Beahan of Streator, Illinois, read a paper on the Standardization of Paving Brick Tests. I followed him up on the program, with another on the same subject. I suffered in following Beahan, from the fact that he left me very little to say, but I profited by the powerful support of his arguments in the matter I was discussing. As a result of this discussion, the Association appointed a Commission of seven members to study the whole subject of Paving Brick testing. This Commission gave some real work and time to their subject, held meetings between Conventions; called in others who were not members to assist in advising and in trying out suggested methods of test, and made a partial report in Atlanta, in December 1895, and a complete report in Buffalo in February

1897. This report, which was published in pamphlet form, made a hundred printed pages, and was a document very creditable to this association. Its recommendations were at once taken up by engineers all over the country, and inside of two years the Standard Rattler Test of the N. B. M. A., was the accepted Standard in nearly all large centers of consumption.

The testing out of new suggestions, and the repelling of unjust attacks upon the method already in use, made work for the members of the Paving Brick Commission for several years, until finally this work was taken over by the National Paving Brick Manufacturers' Association, who are still continuing their studies and whose test is still the standard of the country.

Sees Value of Standardization.

I mention this subject to show that the Association has taken a place, and an honorable though rather small one, in the great work of creating and adopting standards. No more important function in any industry or any walk of life exists, than the creation of Standards. He who created a standard for the methods of life, or a standard of ethics, or morals is hailed as a benefactor of his race, or a philosopher whose name is enshrined in the pages of history. He who defines in an industry the standard of excellence that can and should be met, benefits every man who either makes or uses the product, and is a real public benefactor no less than the philosopher. The constant struggle between the good and the bad, the forces of uplift and those of degradation, is just as keen in manufacture as in ethics or morality, and the setting of a mark which must be met to entitle anyone to the respect of his neighbor is an absolutely necessary first step in placing any industry upon a plane of permanent success.

We have not done as much as we ought to have done upon this subject of standardization. We have been instrumental in defining one test for one product. But neither face brick, nor common brick, nor hollow brick, nor any other clay construction product has been standardized as to crushing strength, or absorption, or resistance to frost, or permanence of color, or any other important subject. We made a tentative effort, years ago, to revise the question of size of brick, and did adopt standard sizes, but we have not followed this up, or made the slightest effort to insist that these standards shall be obeyed, and as a fact, they are virtually unknown today. The work we have not done, which urgently presses upon us, is enough to occupy the whole activity of the members of this association for years to come, if they would but undertake it.

Furthermore, we must do it, or stand by while others, whose interests and knowledge are less, go ahead and do it. Already there are committees in other societies who are attempting to do these very things and we shall soon have standards fixed. It remains with us to say whether we shall be the principal factor in fixing our own standards or not.



Eb. Rodgers, Alton, Ill.



L. W. Penfield, Vice-President, American Clay Mchy. Co.



William Schlake, President, Illinois Brick Co., and Treasurer of the Clay Exposition Co.

In connection with the work of the Paving Brick Commission, certain problems concerning brick structure were looked into a little, without reaching definite conclusions. In 1898, this Association created a permanent committee, called the Committee on Technical Investigation, with an annual grant of \$250.00 a year to expend in making studies for the benefit of the clay industries. This committee has worked chiefly thus far through college laboratories, since they have no laboratory of their own, and have made arrangements by which the College not only furnished the laboratory but subscribed to the funds to be expended.

Under this Committee several important researches have been carried out. The first of these, executed by no less an individual than the present head of the Ceramic Division of the Bureau of Standards, Mr. Albert V. Bleininger, took up for study the influence of the structure of the clay bar produced in stiff-mud machinery, upon the strength of the product. This investigation which covered a year's time, and which makes a 100 page pamphlet, still remains the most authoritative work on this important subject.

A second study executed by Mr. Carl H. Griffin, now operating a large factory in Germany which American capital and energy has placed in the very heart of our great competitor's territory, took up the problem of the causes of black-cored and discolored and swollen clay products, by which hundreds of thousands of dollars annually go over the dump in worthless waste. The work done in this Bulletin was highly successful, and has been of incalculable service ever since to the clay industry. Clayworkers themselves have many times said, that this one Bulletin alone has been worth many times over all the N. B. M. A. has ever spent.

A third study, executed by Mr. Homer F. Staley, now the leading expert in the United States in Enameled Iron manufacture, took up the influence of Sulphur, Carbon and Iron in the burning of clays, and gave us our first definite chemical knowledge of the role played by each of these common impurities. Although not so readily understood by practical men, this Bulletin is of equal fundamental importance in the study of clay burning, and together with No. 2, makes the very best evidence yet obtained in this division of knowledge.

A fourth study, involving several years work, largely done under the direction of Mr. R. C. Purdy, now Research Director for the Norton Company of Worcester, Mass., took up the study of the physical behavior of clays in drying, and while a large amount of data has been secured and beautiful curves have been obtained, the subject has not yet been put into complete form. It is expected that this will yet be done.

The foregoing researches, carried out by the Committee on Technical Investigation, through its Secretary and its appointees, are a concrete illustration of what can be done by a Society, spending even such an absurdly small sum as we have thus far used. So virgin is our field of labor, and so numerous the problems involved in every branch of the industry, that even with these insignificant sums, results of the

utmost financial value, which have saved thousands of dollars in losses, have been obtained and the sum of actual definite knowledge has been considerably increased.

The impetus given by this work to other schools, to the Government through its Bureau of Standards, and its Bureau of Mines, and to private experimenters working in dozens of places all over the country, cannot be directly measured, of course, but to those who have been in close contact with such work, its predominating influence is unquestioned. Almost everyone of the actual leaders of research in clay-working fields in America today got their personal training in this very work of the National Brick Manufacturers' Technical Investigation Committee, and with the enthusiasm and inspiration there acquired, have gone forth to the greater work, by which the position of America has been so greatly improved in the technology of the clay industry.

Because of the looseness of our organization, it has been impossible in this Association to get down to highly exact or specific technical studies and debates at our meetings. While there is a core or central body of men here, who are greatly attached to the organization, and who never miss a meeting unless absolutely unable to come, it is unfortunately true that a great many have joined it who have attended only once or twice, and who drop out and return again without any serious thought of the effect of their instability upon the organization. In fact, these floaters are people who are more or less selfish in their attitude to the Association—who think of what they can get from it, rather than what they can give to it, and recognize no obligation whatever, except their own pleasure and convenience in attending its meetings or going upon its programs. Every organization has some such members, but ours has too large a proportion.

Because of the limitations imposed upon us by the somewhat large temporary or floating membership, and other causes which need not be taken up here, the need of other organizations to supplement the work of this one has gradually developed. A good illustration of this is brought out in the formation of the American Ceramic Society.

At the Pittsburgh meeting in 1898, a young Ceramic graduate, read a paper upon the fitting of glaze to a body. His paper was very simple, and was clearly read and carefully explained and illustrated with specimens, and the calculations made were actually carried out on the blackboard before the audience. In fact, as I look back upon it today, it was a very clear and pretty piece of presentation work. But unfortunately it didn't "take" with the members. No questions were asked, no discussion was made, and no interest shown, other than a little perfunctory applause when the speaker sat down.

An hour or so later, in the lobby, this young man with two others had formed the conception of the American Ceramic Society—a body which should afford a place, and an audience, where papers like his own recent failure would be welcome—

(Continued on Page 531.)

The New Head of the N. M. B. A.

W. H. H. Rogers

President and General Manager Rochester Brick & Tile Co., Rochester, N. Y.



WITH the election of W. H. H. Rogers to the presidency of the National Brick Manufacturers' Association the clayworkers of the Nation look forward to a year of many achievements. Mr. Rogers is a successful clayworker himself, knows the business from Alpha to Omega, and his known progressiveness most certainly will be reflected in his direction of this great body of men.

That the Association needs just this sort of a man at its head can not be disputed as the year of 1913 is going to be a twelve months of decided activity and it will take a level-headed business man, who is alert to seize the many opportunities that will be presented, to advance the interests of the clay product manufacturers as they should be advanced.

Mr. Rogers' election is a tribute to his many virtues, and even if he did not have the executive ability that he has, his reputation for fair-play and justice would have a most wholesome effect on the Association and its kindred and affiliated bodies.

This is the second time within the past few weeks Mr. Rogers has been honored by a similar office. Early in February he was elected president of the Rochester Industrial Exposition Association—an attestation from his own people of his sterling worth as an executive and a man to whom big things might be entrusted.

Mr. Rogers was born on a farm in the Town of Wheatland, County of Monroe, State of New York. His autobiographer very modestly omits to say just when this interesting and important event took place, but it is presumed that it was sufficiently recent to class him among "The Boys of the N. B. M. A.," and with that we must be content.

It will be seen, however, that Mr. Rogers took particular pains to select his birthplace as close to the soil as possible, and that he, therefore, early evidenced an inclination toward the clay, from which he has since worked his bread and salt.

It was in 1870 that Mr. Rogers quit the farm and went to Rochester. His first serious employment was with the Rochester Brick & Tile Co., the same concern he has been identified with so long. It was in 1872 that he enlisted as a bookkeeper with this concern which was considered at that time, as it is today, as one of the substantial business institutions of the city, as it dates its organization back to the year 1853.

Mr. Rogers worked his way from the stool of the bookkeeper until he was elected treasurer of the company in 1894. His progressivemethods and his proven executive ability were not long in being recognized and three or four years later he was chosen president and general manager, a post he has occupied continuously for fifteen years.

In addition to his connection with the Rochester Brick & Tile Co., Mr. Rogers is also interested in the Flower City Brick Co., and holds the position of treasurer and manager of this concern. He also is president of the Rochester Industrial Exposition Association, a member of the Builders' Exchange, trustee of the Rochester Chamber of Commerce, and is interested in every movement of his home city that is launched for the development of the community.

Mr. Rogers might be called a conservative progressive, for while he is awake to the possibilities of "doing things," he believes in doing them sanely. He has made no rash promises for 1913 as president of the N. B. M. A., but declares he will administer the duties of his office with impartiality and that he will encourage and foster the feeling of harmony manifested at the recent convention and bend his every efforts to bring the clayworkers of the country into a united, fighting army against their common foes.

Paving Men Show Progress

ANNUAL REPORTS OF SECRETARY BLAIR AND
ASSISTANT MACDONALD TELL OF LABORS

The annual reports of Secretary Will P. Blair and Assistant Secretary H. H. MacDonald of the National Paving Brick Manufacturers' Association, which were read at the recent annual convention held in Chicago, show that this national body of paving brick men accomplished much during the year just closed.

When it is stated that more than 110,000 pieces of mail were received or distributed by the Cleveland office some idea of the stupendous work that was done may be had. When it is shown that an average of one public meeting every four days was addressed by Secretary Blair one may gain a fair idea of the missionary work that was done in 1912.

These items, however, were but incidental to the real serious work of the organization, for many miles of brick paving were laid during the year, special legislative work accomplished, a great amount of educational work done, and the paving brick industry placed in a commanding position.

Secretary Blair's report is worth reading in full. It follows:

The association's activities for the past year include the caring for an aggregate of outgoing and incoming mail of more than 110,000 communications—

An average of two per day of magazine and newspaper articles—

A public address for every fourth day in the year—

Attending a variety of public meetings, averaging more than two a week and ranging in importance from international engineering societies down through national, state, district and township as well as those of commercial and civic bodies—

Examining and reporting upon a little more than two specifications per week—

Consultations with visiting engineers and delegates sent to us by the government, states, cities and towns, occupying from a day and a half to less than an hour's time—

Dealing with street surface and highway improvement questions, from the proposition as a whole down to a single abstract question—

Restraining our friends from injudicious favors—

Constraining our enemies in the channels of usefulness and arousing the indifferent to seek for favors—

Furnishing lantern slides and lecture materials for the use of our friends where we could not personally speak or be present—

The preparation of bills recommended to legislatures for passage—

Special work of newspapers and magazine advertisements and publicity—

The keeping and collection of yardage accounts—

Efforts through collegiate institutions—

Co-operating with the work of the Bureau of Standards—

Special campaigns directed to influence the immediate use of vitrified brick in a particular locality—

To encourage their use by introducing better methods of construction—

Illustrating methods by actual performance in vitrified brick street and road building have constituted the chief activities of your secretary, assistant secretary and the four faithful and efficient young ladies who comprise the working force of your Association, under the general direction of your Office Committee.

This work has been performed upon a basis of unquestionable engineering approval, tending to invoke from the municipal authorities the most complete confidence and secure sincere public respect.

Regardless of the importance of the question, or the number of times it has been answered, it receives the same respectful consideration that it would if it were of the greatest importance or if it were the first time asked. Our sense of assurance arising from our unshaken belief that vitrified brick is the best paving material when properly constructed—meeting in the largest measure the demand for economy, the greatest satisfaction in use, and affording the best sanitary conditions—the familiarity as to details, the publicity we believe we have given our product, and the feeling that parallels the philosophy that familiarity breeds contempt, oftentimes receives in our experience

a severe shock, arousing appreciation of the fact that we are a nation of one hundred million people, so that we are compelled to recognize that all that we have done is but a drop in the bucket of the work that should be done.

Within the past few weeks, after addressing a certain state engineering society, in which we thought our views on brick street construction were familiar to every member, we were asked by five engineers if it were not possible to procure some printed matter giving detailed information and direction for the construction of brick streets.

New Municipal Officials Must Be Educated.

Municipal officials are constantly changing and the new man who may be an utter stranger to our product must be taught the lesson. In fact the problem before us is one of the school receiving new pupils daily.

The report of the committee attending the meeting of the American Society of Municipal Improvements at Dallas, Texas, last November 11-15, inclusive, is attached hereto and to which the serious consideration of this association is invited.

At the last Board meeting a committee was appointed that should prepare suggestions for Federal Aid which when reported to this convention may be approved and laid before the joint congressional committee now considering the subject.

The sample road, the construction with vitrified brick of which we were to supervise, leading out of Washington, over the Chevy Chase Road into Maryland, has not yet been constructed. The material on account of scarcity of cars did not arrive in time before hazardous weather set in last fall, and we could not give our consent to its construction under such conditions. It therefore will be delayed until the coming spring.

The Office of Public Roads under the Agricultural Department has had under consideration for more than three years the promulgation of a bulletin advising manner and method of the construction of vitrified brick paved country highways. This bulletin has been delayed, though frequently promised. I believe there should be a committee appointed at this time whose duty it should be to prepare an approved resolution, calling upon the Secretary of Agriculture to cause such a bulletin to be prepared and distributed,—that such resolution ought to call the attention of the Secretary of Agriculture to the public necessity therefore, as well as to convey to that governmental department the information that the immense industry of the country affords a road material, in the use of which no experiment whatever is involved.

During the past year extraordinary efforts have been put forth by a prominent Portland cement interest to persuade the use of cement-concrete for both foundation and wearing surface of street pavements and country highways, and considerable mileage of it has been used. Very careful investigation



H. H. Macdonald, Asst. Sec. of
N. P. B. M. A.

of its merit as advocated by that company has been undertaken by your secretary. We do not think that its use in such way need be the cause of much concern on the part of the paving brick manufacturers for the following very apparent reasons:

First. If it is cheapened below the price of a brick pavement then it is very much inferior to it.

Second. It is exceedingly objectionable on account of its adaptability to reflect the sun's rays.

Third. Because of the aggregate stone portions being so small they readily whip out and effect rapid wear.

Fourth. The great difficulty attending satisfactory repairs.

Fifth. When a quality insuring durability is reached, the cost is excessive and the slipperiness of such pavement exceedingly objectionable.

Sixth. At its worst it has nothing at all to commend it.

Seventh. At its medium or best condition it has no quality whatever that is not surpassed in a brick pavement.

Eighth. Its short time in use in the central states and west, gives no guarantee of its future worth.

Ninth. A conservative, honest and careful member of the American Society of Civil Engineers said of such pavements, at the last annual meeting of that society, of where they have been longest in use,—"practically all the concrete pavements that have been laid in New England without a bituminous top have failed." Of course it follows that if a bituminous top is necessary to the success of the pavement itself, the cost of maintenance makes its use seriously objectionable.

Association Moulds Business Policy of Industry.

While our membership is slightly larger in number and output than in former years, decidedly of greater unity and force of action than ever before, it is to be regretted that there are a few manufacturers who do not understand or appreciate that the National Paving Brick Manufacturers Association moulds the business policy and cares for the highest interests of the industry, in which through no fault of the Association, such manufacturers have no voice or influence in shaping the purposes, action and policies it promulgates and establishes, and who necessarily suffer on account thereof. The loss in not being members of this Association is not compensated for by the saving made in membership dues.

Listening to addresses, upon separate occasions, of two eminent students of business integrity and civic order, Martin W. Littleton and J. W. Burns, each expressed kindred ideas which are becoming a force in all our business relationships.

The one said that which hinders ideal conditions of business and social life was because men such as he was addressing were loath to speak their real judgment upon matters of deepest concern to them, for fear of hazarding personal friendship, but that such was a false idea, that with sincere men a mutual respect was secured by frankness.

The other said the inactivities of business men in civic affairs on the part of the substantial men of the country was a political crime. It is needless to say that slow progress for best conditions has followed and many objectionable features have taken root, the elimination of which must be enforced.

In the application of this philosophy to real business, the lack of success is greatly due to cowardice and evasion. Today the man or community who is both brave and honest is the one achieving success.

I am told that the policy and conduct of one of the greatest merchandising houses in this city and in the world, whose success is unparalleled, by reason of its integrity in all its dealings, has not only benefited itself thereby, but has practically injected a like spirit into the conduct of its rivals as a matter of business competition.

Suppose you are asked as I have been asked by one or more of the leading government departments, and again suppose you are asked as I have been asked by the heads of state engineering departments, suppose you are asked by international and national technical societies as I have been asked, how best to lay a brick pavement to the best advantage and to its greatest worth. What would your answer be?

Salvation Depends on Proper Construction.

It has occasionally occurred, that insidious doubt has found its way into the public print, affecting a lack of confidence in the value, the worth and superiority of our No. 1 Directions for the Construction of Brick Street Pavements. In my judgment the life and salvation of the industry in which we are so deeply interested, is dependent upon them and the advanced position they occupy must neither be compromised, retreated from nor surrendered. Not that we shall be influenced by the fact that our rivals through patents and secret process having full control require that their pavements be constructed according to design in the most minute details, in the belief that such will best conserve their dollar invested in it, but because we are right and have been right, and because it is high time that whatever mist prevails be cleared away, that this Association at this meeting ought by resolution appropriately but unmistakably declare its faith in all details and especially the use of the cement filler as being the best manner and method of constructing brick street pavements, so that we will be forever established in the confidence of the engineering profession and the taxpayers of this country.

Assistant Secretary MacDonald devoted his efforts in the main to the publicity end of the work and accomplished wonders during the year. His report shows the immense possibilities for publicity work, not only in the paving brick industry, but also in the entire clay product field. The report follows:

A few months ago construction reports informed our office that an Illinois city of 50,000 inhabitants was planning a considerable amount of paving. A personal letter to the mayor brought a prompt and courteous response and at our request he mailed us a list of interested citizens and property owners. We mailed circular letters and brick boosters with the result that brick was chosen as the material for all the work to be done this year.

In a general distribution of our booklet, "The Dependable Roadway," several copies were mailed to a city in West Virginia. Many months afterward a postcard detached from the booklet found its way to association headquarters and informed us that county highway paving was contemplated. We secured names of officials and interested persons and mailed them letters and printed arguments. The next we heard of this situation was from one of our constituent companies which informed us that they had sold a large order there.

Late last fall we received a letter from a New York City man who said he had seen some of our literature and wished to know where he could most conveniently inspect properly constructed brick paved country highways. There was nothing to indicate the inquirer as more than a private citizen with a casual interest in good roads. We referred the writer to the brick roads out of Buffalo and later arranged a trip of inspection in company with a man well informed in paving matters.

It transpired that our inquirer was an engineer connected with a public commission. He made a strong favorable report which evidently played a large part in securing specifications for brick in an improvement of magnitude recently bid upon.

We sent our publications to a Michigan mayor who reported in newspaper clippings as working to bring about extensive street improvements. He wrote us praising the booklets but regretting that the brick streets already laid in his city were not more in keeping with our pictures and claims. Correspondence ensued and the mayor sent us samples of brick taken from the streets in question. The samples showed plainly the brick had been badly laid.

So much was at stake that Secretary Blair visited the mayor, convinced him just what results could be anticipated from proper construction and the city was saved for brick.

Here are a few of the scores of cases which might be cited where results from our publicity can be traced in detail where there is a direct chain of circumstances leading from printers ink to brick paving. It is not always so easy for us to establish this connection, even when it exists. No one can follow the processes of a reader's mind and hence it is only fair to this association to remember that the great volume of advertising effort in the world is less easy to connect with definite results than is any branch of business activity.

A publicity man is a sort of hunter, who tries sometimes to shoot directly at his mark, but who must also do a great deal of shooting, apparently at random.

In assuming this, we ask you to remember the nature of your sales problem, and how it differs from most other sales problems. A man who wants to sell machinery for example, deals perhaps with one man, at the most with a board of directors or a half dozen officials in some company. Paving brick is sold to the public at large. It is true that a half dozen men or less may act upon the contract, but these men are public officials and sensitive to public opinion, particularly to the opinion of those men whose property abuts on the street to be paved.

Perhaps half the paving enterprises in the country originate, not with officials, but with some obscure citizen, who, for reasons known only to himself, decides that he would like to live on a street as good as his neighbors'. Likewise the obstructions which hinder particular paving jobs are usually raised by private citizens of a more backward or conservative type. Everywhere the abutting property owner is given a considerable voice in determining the kind of street improvement to be made and many states actually leave the determination of the whole question to signatures representing a majority of foot frontage.

Then every lot owner, every citizen, is our potential patron if not our actual patron. How can we reach him? Not by confining ourselves to arguing before public officials or appealing to good road societies and auto clubs, although all these are

fruitful measures. We must make our publicity broad enough to reach everybody.

Our most general measures are newspaper publicity and magazine advertising. The former must be secured indirectly as opportunity offers itself. Editors very properly print what they think will prove of interest to their readers. They want stories, not puffs. They are particularly charged to avoid anything which has the stamp of advertising. As news readers, we respect this policy.

However there is news, real news, happening in the world of highway improvement every day and once in a while when some incident peculiarly adaptable to news treatment comes before our attention, we find it is possible to secure recognition of its merits by editors. Good road movements of any legitimate nature are fostered by our association for the publicity that they secure. Anywhere that men discuss good roads, they cannot avoid talking about brick roads.

Lately some newspapers have written to us directly asking for news matter relating to paved roads. In general we find that there is a decreasing tendency among editors to look upon brick as a private interest, subject to the rules which bar advertising. Brick was formerly classed as one of the contending commercial products in the field of paving. Today it is the product and the news world is beginning to lose its wariness and to treat it like any other age-old staple.

We come more near to seeing our mark, when we prepare matter for the technical journals. Publicity or paid advertising in engineering and municipal journals is a means to a particular end. The same is true of the attention which we give to automobile and good road journals. The auto owners make up the great tangible nucleus of good roads advocates and they can be educated as to the merits of brick, if not already convinced, with a minimum of wasted effort. Journals of the classes referred to are still inclined to remain neutral on questions involving different paving materials and even to minimize discussion as to their relative merits.

It is our aim to convince these journals they would lose nothing and gain much by frank statements. A departure toward the newer and better policy is to be noted in the Engineering Record which in commenting on the 50 year bond issue for the mammoth Ashokan reservoir highway improvement decisively stated in an editorial that brick is the material which will most nearly approach the life of the bonds.

Pamphlets Important Publicity Aid.

The association as you are aware, also has numerous booklets, appropriate to the various phases of our cause, and ought to have more of them as conditions change and give new themes. A pamphlet with a postage stamp upon it is like bread cast upon the waters. The pamphlet may merely stimulate interest in brick paving; it may present the exclusive advantages of brick, always avoiding unwise and ill-natured knocks at other paving materials; or it may devote detailed attention to the technical methods of paving. This is a department of the work not exclusively of an advertising nature, yet it has a tremendous bearing on problems of publicity.

Just as a satisfactory brick pavement is the best possible advertisement, a faulty pavement is the greatest possible obstacle to further contracts in the same locality. Ignorance of proper construction methods on the part of contractors or officials account for occasional unsatisfactory work, which rivals are quick to seize upon as a text. It is therefore just as important to the publicity department as to any other department that our patrons, officials and citizens, shall know how to get their money's worth in good construction in a job of brick pavement and know enough to object vigorously and effectively when they are being given anything else.

After the printed pamphlet comes the personal letters, the last, most specific and most effective link in our chain of publicity measures. The letter is used only when a definite end is in sight. It may be prompted by a general situation where there is prospect of a market for paving brick or it may be the result of inquiries prompted by general publicity.

With a little effort in the ordinary course of office routine there has been built up a mailing list of about five thousand names. This could be augmented until it contained the names of at least all the city engineers and other important officials. While it is true that officials as a general rule are constantly changing, the mailing list could easily be kept up-to-date.

Best results can only be secured through modern office equipment. If we are to deliver a broadside at an hour's notice upon any critical situation we must have rapid fire guns. The multigraph purchased for our office has more than justified the expenditure. A dictating machine would be a great aid to your secretary and assistant. It probably would save stenog-

raphers' time to such an extent that it would pay for itself within a few months.

The association has many sources of information, but none so valuable as the constant contact with its own members. As supporters of the association, you will get the fullest possible benefits by keeping the association informed as to situations in various localities by sending in marked copies of newspapers and names of those whom it is desired to influence.

After all our product is its chief recommendation. It is true that a temporary demand for paving materials without merit may be created by widespread advertising. It is also true that an article of merit will win a conservative success sometimes without being advertised in print. But the irresistible combination is merit plus advertising.

The manufacturer plans confidently; who knows that his achievements will reach the ear of the world? The publicity man works confidently; who knows that experience and tests will never give the lie to his praises.

The Civic Awakening.

It is particularly gratifying to be working for a product that is forging ahead in public estimation with such amazing strides. The great civic awakening which is sweeping over the country is eventually due to reach the question of sanitation, economy and durability in pavements. Then brick will come to its own. One instrument above everything else will hasten this—publicity.

F. A. Seiberling, an Akron, O., rubber manufacturer, has a vision of the day when paved roads will connect every center of population and predicts that power trucks will soon be serious rivals of the railroads for freight hauls of moderate length as brick is the one material which is making good on the main market roads which have been paved. The possibilities in sight for our product are beyond comprehension.

When you make your plans for the coming year; when you decide how much of an appropriation you wish to set apart for awakening the public to the fullness of this vision, you will decide whether the vision is to be fulfilled by a later generation, when we are in our graves or whether it is to be seized and made a living reality within the next few years.

"The Development of the Proper Relations Between the Paving Brick Manufacturers as Represented by their Salesmen and the Engineers in Charge of Paving Work" was the subject of the paper read by E. P. Foster, of the Bessemer Limestone Co., Youngstown, O. It follows:

The salesman selling paving block should represent in the best sense of the word the paving brick interests, and in doing this he represents, also in the best sense of the word, the company for whom he sells. Also the engineer in charge of paving work should represent in the best sense of the word the municipality which employs him. Therefore it is necessary, in order to get the best results for all concerned, that the engineer and salesman should work in harmony.

The ideals in the paving brick business in its early days of business were not high. The tendency was to sell one's product no matter how, or what the results obtained afterwards were, whether it was properly laid in the street by the contractor, supervised by the engineer, or what, just get rid of it, that was all. These conditions prevailed mostly because the manufacturers as represented by their salesman lacked experience, not in selling, but in the results obtained by using such selling methods. The engineers at that time were not conversant with the best methods of constructing brick pavements, and the salesman was not in a position to enlighten him very much on the subject.

These conditions have changed in the past few years. The paving brick manufacturers, along with other big business men, have accepted the modern idea of doing business, and the standard they require of their salesman is high.

The tendency in the paving block business is to standardize, which is all well and good in the manufacturing and construction end, but it seems to me in the selling end you can idealize somewhat, and get better results than you can to standardize. A standard, as I understand it, is a fixed point to attain. In idealizing you do not try for a fixed point, you establish your course in the right direction, and you may advance way beyond a set standard; in other words, idealism in selling paving block is a course, and always in the right direction.

I expect there will be a lot of paving block salesmen who listen to this, if the doors are locked so they cannot get out, and they are a first-class bunch of fellows taken as a whole, who will laugh at such a thought as idealism in selling paving block, but I cannot see for my part why you should not strive for high ideals that are workable, not visionary, in selling paving block as well as in any other line of work.

Now let us see what the relation of salesman and engineer

is today. From my own experience I know that the salesman and engineer do not always work in harmony, but I believe, in most cases where they do not, it is the fault of the engineer rather than the salesman. The salesman is generally anxious and willing to work with the engineer, for the benefits that can be obtained by his company and material where pleasant relations are maintained. After the material is selected for a paving job, the salesman knows that the person he has to please in the greater sense of the word is the engineer in charge of the work. This is not always so, for in some cities the Board of Works looks after the laying of the material, the engineer merely laying out the work for the contractor. In the majority of cases, however, the engineer is the judge as to quality of material. Now suppose, as often happens, the material selected by the officials in the municipality is not the material the engineer favors, the chances are that right then and there the engineer makes up his mind that he is going to make it just as hard as he can for the company whose material has been selected to please, and there is trouble all through the life of the job, and in most cases the salesman of his company gets the worst of it.

It is invariably the salesman's business to get the good will of the engineer, but it is not the engineer's business, or many times he thinks it is not his business, to be on good terms with the manufacturers of paving brick as represented by the salesman.

Personally, I think that most paving brick salesmen try to develop the proper relations between the engineer and themselves. A paving brick salesman is in the position to give the engineer the benefit of his observations, of the different kinds of pavements and their construction, in the territory which he covers. If he is honest and tells of the conditions as he sees them, without using his imagination for selfish interests, he can be of much benefit to the engineer, whose travel is more or less limited, and whose experience is often confined to his own city.

National Association "Spreads Gospel."

The National Paving Brick Manufacturers' Association has spread the gospel of good construction pretty much over the country, and though engineers may not agree with their specifications as a whole, the work of the association has tended to standardize the construction of brick pavements, and I believe we are getting better brick streets as a result of this than we did a few years ago.

In talking with an engineer, a diplomatic salesman can go over the points wherein he knows that engineer does not subscribe to the National Paving Brick Manufacturers' Association specifications, and by citing examples of good and poor construction, in different cities, he can prove to this engineer that on the whole the good construction is done under the specifications of the National Paving Brick Manufacturers' Association and the majority of the poor construction is done under the individual ideas of each engineer.

I have found in my experience that engineers want to get the salesman's opinion as to certain methods of construction which are advocated by the National Paving Brick Manufacturers' Association and which the particular engineer to whom the salesman is talking has not tried. I can cite a special case where an engineer is using the cross expansion joints. This engineer overheard a conversation between two men about the construction of brick streets. One of these men was an authority on construction, having made a study of it. Evidently the subject of cross expansion came up and this student of construction expressed himself very forcibly in this fashion: "Cross expansion joints are absolutely wrong in a street." I was calling on this engineer and he sounded me on the subject. I agreed with the expert. Before I left this engineer wanted a copy of the latest standard specifications sent to him at once.

The salesman has his company's product to sell and that is what he should talk about to the engineer, not the other fellow's product. In working up a sale for his own product, however, he can further the interests of brick paving by talking proper construction to the engineer, citing the method of construction of the best streets in the territory in which he travels, and see to it that the engineers are kept posted on the best methods of constructing brick streets of the times.

He should also call on the engineer after the contract is awarded, if his material has been selected, and talk with him and see how the material is being handled as it is used in the streets. The salesman can often do himself and company, also the engineer, good by meeting the inspector who has direct charge of laying the block under the engineer.

The inspector may be culling the block closer than is necessary to get a good street. This in turn comes back to the engineer, and if taken up in the right way by the salesman, a better understanding is had and minor defects in material that looked large fade away.

If you want to get the best results, paving brick salesman, get acquainted with the engineer, work with him, and keep in touch with him during the life of the job.

The National Paving Brick Association is one of the

few real active agencies in the clay product industry and its work has scarcely begun.

PLANS BOOK ON FARM BUILDINGS.

"Brick and Clay Record" Prepares to Issue Bulletin on Profitable New Field.

The growing interest among farmers for fire-proof, frost-defying, moisture-immune outbuildings that are cool in the summer and warm in the winter has turned the clay-worker's attention to this new and heretofore neglected field for his products.

Recent articles in "Brick and Clay Record" on the use of paving blocks, common brick and hollow block in the construction of silos has brought forth a flood of inquiries on this subject and shown the necessity for some practical book that will give specifications, working plans and suggestions. For this reason "Brick and Clay Record" has decided to issue a concise bulletin or pamphlet on "The Use of Burned Clay About the Farm," and its editors are now engaged in compiling all the data on the subject.

The proposed book will be made as concise as the subject will allow to permit of free distribution, but necessarily must cover a wide range of subjects.

In the compilation of this book readers of this journal may materially assist and an invitation is given every one to contribute helpful suggestions. Contributions from those who have sold hollow blocks or brick for silo construction are especially solicited, and wherever it is possible, specifications and working plants, with an estimated cost for labor, etc., should be given.

Farmers should construct every building on their premises of burned clay—from the dwelling to the chicken coop—and whatever hints or suggestions along this line that can be given will be thankfully received.

Wherever possible actual photographs of the silos or buildings should be sent, or if this is impractical, drawings or rough sketches to explain the suggestions should accompany the contribution.

Suitable credit will be given in the proposed book to all who contribute to its usefulness.

There are several enterprising clayworkers who have developed a considerable business along this line, and to this class particularly is this appeal addressed.

In this connection it might be added that this journal also has under preparation a pamphlet on "Concrete Failures and Fallacies." This will be issued shortly.

Hollow Ware Machines in Demand.

The orders for hollow ware machines which the J. D. Fate Co., Plymouth, O., is receiving, show that the demand is increasing for this popular and inexpensive building material. Among the orders recently received by the Fate company are: One from the Ogden Pressed Brick Co., of Ogden, Utah, for a special premier combined hollow ware machine with two automatic cutting tables and fireproofing dies in all sizes from 2x12 inches up to 12x12 inches; another order for a special premier hollow ware machine, end-cut brick, solid brick and fireproofing dies and cutting tables came from Winnipeg, Can. Jasper Adams, of Battle Creek, Mich., ordered a full outfit of machinery for making both brick and tile. Another order is being prepared for J. D. Rumsey, of Stryker, Ohio, for an imperial machine and full set of dies. The company is also preparing to ship eight automatic side-cut brick tables to Canada.



Members of the Bessemer Limestone Co., Youngstown, Ohio, Who Were Present at the Chicago Convention. Reading from Left to Right, Bottom Row: F. R. Kanengeiser, Gen. Supt.; C. C. Blair, Sec. and Gen. Mgr.; J. R. Rowland, Treas.; W. J. Whitworth, Salesman. Top Row, Left to Right: A. J. Aubrey, Eastern Sales Mgr.; C. E. Foster, Western Salesman.

BESSEMER LIMESTONE REPRESENTATION.

"Dividend Makers" of This Organization Among the "Live Ones" at Headquarters.

The "dividend makers" of the Bessemer Limestone Co., Youngstown, O., shown in the accompanying picture, were one of the "livest groups" at the annual convention of the National Paving Brick Manufacturers' Association and the Clay Products Show.

The Bessemer Company is one of the most active in the N. P. B. M. A. and has two of the largest and most modern paving brick plants in the country, as well as large lime-stone quarries and crushing plants. It is at present installing and remodeling one of its lime-stone crushing plants which when completed will be one of the largest in the country.

Treasurer Rowland looks after the financial end. He was for many years prominently engaged in the banking business at Youngstown, O. C. C. Blair, secretary and general manager, who has been secretary of the company for five years, was given the general managership of the company in addition to his secretarial duties. He has the confidence and good will of his entire organization, is an untiring worker, always on the job, thoroughly posted on market conditions and the responsible and efficient head of a harmonious organization.

F. R. Kanengeiser, who has been general superintendent of the company for the last seven or eight years, is a thoroughly competent mechanical engineer and one of the most promising young men in the manufacturing end of the business. He has had charge of the construction of the Bessemer plants and is right up to the minute on all the latest improvements in the paving block business.

The selling organization of the company is composed of W. J. Whitworth, salesman in the Youngstown district, E. P. Foster, in the West and A. J. Aubrey in the East. Mr. Whitworth has the confidence and esteem of all of the contractors in his territory and is one of the liveliest and active men in the organization.

E. P. Foster, formerly with the Main Belting Co., is equipped with a big supply of enthusiasm and energy, which makes things lively for his competitors in the West. He read a very interesting paper, "The Development of the Proper Relation Between the Paving Brick Manufacturers as Represented by Their Salesmen and the

Engineer in Charge of the Paving Work," at the annual meeting of the N. P. B. M. A.

A. J. Aubrey was for four years assistant general superintendent at the works but for the last two years has been sales representative of the company in the East. He is the company's publicity man. He is well informed on the manufacture of clay products, being a ceramic chemist, as well as having full theoretical knowledge of the business. He has proved to be an especially efficient salesman.

The selling methods of the company are conducted on a high plane. It has always stood for good prices and ships only materials fit for first class paving.

The six "live wires" of the Bessemer company renewed many acquaintances while in Chicago, where they found many of their friends assembled.

VETERAN TELLS WAR STORIES.

Some remarkable experiences were told to a number of convention delegates about the recent Civil War in Mexico by W. J. Carmichael, a representative of the American Clay Machinery Co. Mr. Carmichael was in Vera Cruz when Diaz was in prison there.

When leaving Vera Cruz, Mr. Carmichael engaged a Pullman berth and when en route the car was ransacked by rebels, bed clothing torn and the car almost wrecked. With others in the car he was put off at a small station and had to wait there many hours for the arrival of a train going in the same direction. This later train was boarded and, fortunately for Mr. Carmichael, it was going to Tampico. There was only one unoccupied berth and by ruse Carmichael got the porter to make up the berth and went to bed.

In Tampico, while he was eating in a restaurant, there was a loud report outside, caused by a one-mule car running over a railroad torpedo which had been placed on the track. This small explosion caused havoc in the restaurant, the owners believing that the rebels had started a battle. "A fine country to visit and a fine country to leave," said Mr. Carmichael.

IF YOU HAVE A WANT.
Make it known in "Brick and Clay Record's" Classified Columns. They bring results.

EDITORIAL SECTION

Volume XLII. CHICAGO, APRIL 1, 1913 Number 7.

THE CLAYWORKER'S OPPORTUNITY IN 1913.

There is a nation-wide movement in the United States for municipal beautifying. Newspapers are devoting page after page of space to the subject. Magazines are teeming with exhaustive articles. Commercial clubs and civic bodies are advocating the idea. City councils are showing an awakening interest. Architects are drawing elaborate plans.

In many localities the scheme **HAS GROWN BEYOND THE DREAM PERIOD** and is being put into **ACTUAL** practice. In others it only has reached the **FORMULATIVE** plan, but a short time will see some material results. In still others the dreamers are yet **PAVING THE WAY** for the materialists.

Chicago, St. Louis, New York, Boston, Philadelphia, Pittsburgh, Cleveland, Memphis Chattanooga, Atlanta, Denver, San Francisco, Los Angeles, Seattle, Portland, and a score or more of others, either have started the actual work of making a more beautiful municipality or are formulating plans.

This great movement—this great social and municipal awakening—is not confined to the larger and more aggressive communities either. The smaller cities are getting busy and it is no uncommon thing to hear of a town that does not boast of more than 10,000 population planning to straighten out the streets, re-arrange the park systems, and build for architectural perfection as well as practicability and serviceability.

The movement is a great one. It is one that is meeting with the approval of **ALL THINKING MEN** who look into the future as well as into the present.

It does not concern itself alone with making a prettier city, but a safer and more durable city. Fireproof buildings, both for business and living purposes are urged.

And the one central idea is in the **HOME** life of a community. Architects have been asked to submit plans for ideal residence sections. Prizes have been awarded for the best of these and public exhibitions held to educate the people to the beauties of the plans.

In Boston the city beautiful idea already has been given a fair test. The paper read before the recent annual convention in this city of the Building Brick Association by Mr. Joslyn, and which was published in full, with illustrations, in the March 15 number of this journal, shows to what extent this work has been carried on in that locality.

Chicago already has started the movement for the city beautiful. For several years it meant only talk—discussion. Today, however, those behind the idea **ARE DOING THINGS**—they are **ACCOMPLISHING** something.

Narrow streets are to be widened. A great central union station that will take care of the traffic for years to come has been planned. A great parkway and boulevard system all over the city is part of the general plans.

In short, when all the plans are carried out Chicago will be pointed to as one of the prettiest spots on the surface of the earth.

Other cities are going about the matter in the same monumental way. The fever is general.

And don't overlook the fact that in every city the central idea is the **COMMUNITY** homes—a higher development of the residence section, and this feature is considered the most important of all by those who are doing the planning.

Homes are designed and grouped in surroundings that are artistic and harmonious. Wide streets and pretty driveways are a part of the general plan.

It is a great idea—a monumental idea—and when one stops to consider it the project seems almost too stupendous for practical results.

But, we who are accustomed to thinking in narrow channels and making comparisons by our present day standards, are not keeping pace with the leaders. The idea **IS** practical. It is so practical it already has been put into actual use.

It behooves us, then, to get away from the I-Can't attitude and swing ourselves into the We-Will band wagon.

And while we are joining the big procession do not overlook the fact that the manufacturer of burned clay has a most excellent opportunity to push himself into pre-eminence.

All this city beautiful planning **MEANS MORE AND BETTER HOMES**. The people are being told

about the Nation's fire waste. They are being educated to the idea that they must build for permanency as well as for the home beautiful.

The manufacturer of burned clay knows that this must necessarily mean his product. He knows that no permanent home can be built unless it is of brick. He knows that no truly artistic home can be built without the use of clay.

This movement is the clayworker's **GREAT OPPORTUNITY**. Let him take a prominent part in the planning, in the designing and in the practical interpretation of the idea.

Attend these meetings of the various civic and commercial bodies. Take part in the discussions. Encourage the idea. Get your architects lined up. Show them what brick really means in the plans underway. Talk brick night, morning and noon.

Get your local papers to discussing the idea. Show them what other cities are doing. See that your own community gets the fever.

It's your chance, Mr. Clayworker—seize it!



THE LESSON MR. CASSON TAUGHT.

In the March 15 number of this journal was printed a most excellent paper read by Herbert N. Casson at the recent annual convention of the Building Brick Association in this city. His talk was on the value of **ADVERTISING** clay products as an aid to the selling end of the business.

Mr. Casson presented his arguments in a delightful way and he **AROUSED** some of the indifferent members of his audience to the point of activity, if we are to take their expressions as evidence.

One point that stuck out in Mr. Casson's address was the statement that while the cement manufacturer had been alive to the possibilities of publicity and had, therefore, gotten a bulge on the brickmaker, he was satisfied that he could take the clayworker's product and **PLACE IT IN THE LEAD** of all building material within a year's time.

M. Casson is a publicity expert. He makes a specialty of creating a demand for a given product. He knows the value of a product as a subject for profitable publicity work, and what he says **OUGHT** to have **SOME** weight with the brickmaker.

And Mr. Casson is not a biased judge. His field is a broad one. Today he may be directing a campaign for wheelbarrows, tomorrow baby carts and the next day a toilet soap.

Clay products to him represent a utility that **CAN** be sold. He sees cement, lumber or whatever other building material there may be as a certain commodity that **OFFERS THE OPPORTUNITY** for successful salesmanship.

Weighing all in the balance of judgment he declares that clay products can be made to sell **EASIER** and **QUICKER** and he wonders why the clayworker doesn't **TRY** to dispose of his wares in a modern way.

WHAT THE CHALDEANS PLAN TO DO.

A secret society was organized among the clayworkers who attended the recent national convention. Four hundred and nine applicants were received into this new order, and this same four hundred and nine left the lodge room with expressions of satisfaction, for they had a good time and a profitable time.

This new secret society was heralded in advance under the title of the Ancient Order of Chaldeans, but despite the fact that announcements were made that the order was to be a **PERMANENT** one and that the institution of the Chicago Temple was **NOT** to mark the end of its existence, many gained the impression that the initiation of the candidates on the evening of March 5 was intended solely as a part of the entertainment program for the convention visitors and no more.

If there are those who **STILL** entertain that idea it is **TIME TO DROP IT**. The Ancient Order of Chaldeans **IS** a **PERMANENT** institution. It is **MORE** than an **EXCUSE** for entertainment at the conventions.

The new society, while organized and brought into existence on rather short notice, was intended as a **SERIOUS** element in the clay product field, and, as such, asks for the support of the clayworkers of the Nation.

The new lodge or order has been chartered under the laws of the State of Illinois. The Supreme Temple has been formally organized, the officers elected for the first term, a set of constitution and by-laws adopted, and the **FIRST** temple instituted with more than four hundred members—which, it must be admitted, is a most encouraging beginning.

The excuse for its existence lies in these words taken from the constitution: "To promote and en-

courage a more fraternal spirit among the clayworkers."

There is no other purpose in view by those responsible for its existence and any clayworker or member of the allied trades or interests, is eligible to membership.

The great value that similar organizations have proven to be among the industrial trades in bringing the various elements together in a fraternal and social way shows that the clayworkers should profit thereby.

The Ancient Order of Chaldeans has been founded on a substantial basis and needs the co-operation of all progressive clayworkers.



ASSOCIATION WORK IS GROWING.

It is with the most gratifying feeling that "Brick and Clay Record" notes the awakening of the clayworkers of the Nation to the importance of association work. It feels that at least a part of the credit for this encouraging condition belongs to its efforts, feeble though they may have been.

There is scarcely a city in the land of any importance that is not taking up the matter of local association work and the smaller cities can be counted by the hundreds.

On all sides one hears of local publicity campaigns that are either being planned or have been inaugurated.

From many sources one hears of the "Get-Together" spirit among clayworkers—of a **SINCERE** desire to **PUSH** clay products and **BENEFITS** which are being secured from that pushing.

It is a most optimistic sign. Keep up the good work, clayworkers, and do not despair if your **INITIAL** effort has not brought the returns you **EXPECTED**.



The Letter Box

One of the newest letters to come to "The Letter Box" is from W. T. Houlahan, a Seattle clay manufacturer and a member of the Washington Clayworkers' Association, which recently showed signs of renewed activity following the Ford Motor Co. campaign instituted in its behalf by this journal. Read what Mr. Houlahan has to say:

You certainly deserve credit for your skilful handling of the Ford Building matter. The way you got after this is certainly both a credit to your efficient staff and your magazine. There never has been a time when action of this kind was more neces-

sary. As you say, lumber and cement interests are organizing and expending enormous amounts in publicity, while the clay men in this Northwestern country are doing almost nothing.

I was talking to a prominent manufacturer only recently on this subject. He informed me that he thoroughly believed in such a course—that is in a system of organized publicity. "But!" he exclaimed, "I cannot get any bank to advance me any money for this purpose." In other words, unprofitable business makes it almost impossible for any manufacturing concern to expend what they ought to in necessary publicity. You cannot burn brick without some sort of fuel.

The outlook is good here for the spring trade, and yards that were shut down are starting up again. Among the number are those of the Harper-Hill Brick Co., Lake Union Brick Co., and the Lohse Brick Co. The Washington Brick & Tile Co. has depended on the open air drying so it will be sometime yet before this yard starts.

There are several large brick school buildings to be built right away in Seattle. One was let in Prosser Feb. 21 to Storgard & Co., North Yakima, taking about 900,000 brick, another, a Sister's Hospital in North Yakima, takes more than a million brick. This brick is being supplied from the Builders Brick Co., Seattle. The Granger Brick & Tile Co., of Granger Wash., will furnish the brick for the school at Prosser.

Prices on common brick are very low, with very little prospects of an advance. The Lake Union Brick Co., under Montague Bond's management, is aiming to quit the common brick competition as much as possible and invade the face brick market. The Steele & Steele brick plant at Vashon Island is in doubt as to whether it will start or not. M. P. Marcuson, who purchased the Ballard Brick Co.'s holdings is also uncertain as to whether he will get started or not.

The only new plant that I know of in contemplation is that of the Palmer Clay & Coal Co. This will be located at or near Roslyn, Wash. W. C. Mitchell made some tests on this same body of shale four years ago, which were very successful. I understand that the American Clay Machinery Co. has the order for this outfit. This I think will be about all the news at this time.

Another interesting letter comes from W. E. Dunwody, president of the Standard Brick Co., of Macon, Ga., one of the most progressive manufacturers in the country. He makes a most valuable suggestion to brickmakers and undoubtedly some one will listen to his appeal and devise some sort of counter that will fill the requirements of a brickmaker who wants to "trim the corners." His letter follows:

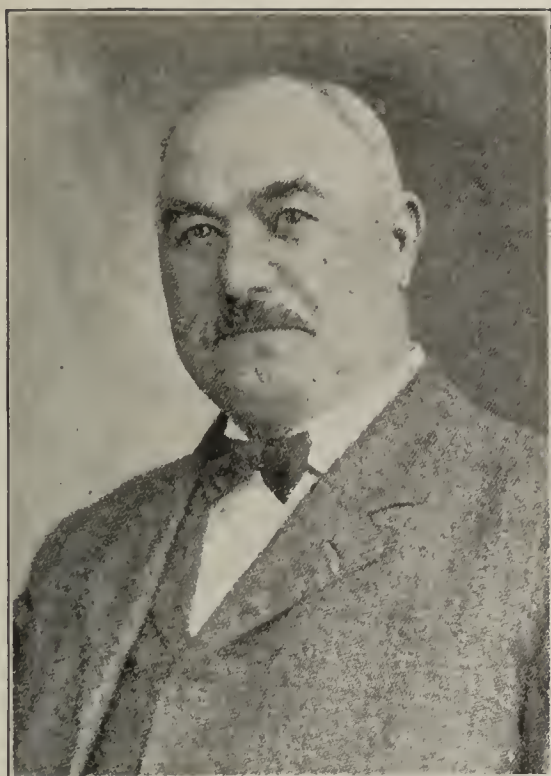
In regard to suggestions as to how to improve "Brick and Clay Record," the plan pursued by "System" in Chicago, of the expressions by different manufacturers and merchants, in different lines as to how they cut out useless work, clip corners of cost, as to the proper manner of keeping records, cost systems, etc., has always appealed to me as customs which could be used to a very great advantage to the brick manufacturer.

For instance, suppose you send out to a number of your subscribers, or even if they were not subscribers, brick manufacturers, and ask them to write you just how they managed to count the number of brick they made daily? This is a very important matter, and one which has never had much attention so far as the writer is advised. I don't think there is a first class brick counter on the market. If so, I have been unable to find one. I am now trying to manufacture one myself here, which will count the brick accurately as they come from the machine. That is, the end cut brick machine. Of course, the side cut machine would have to use a different device.

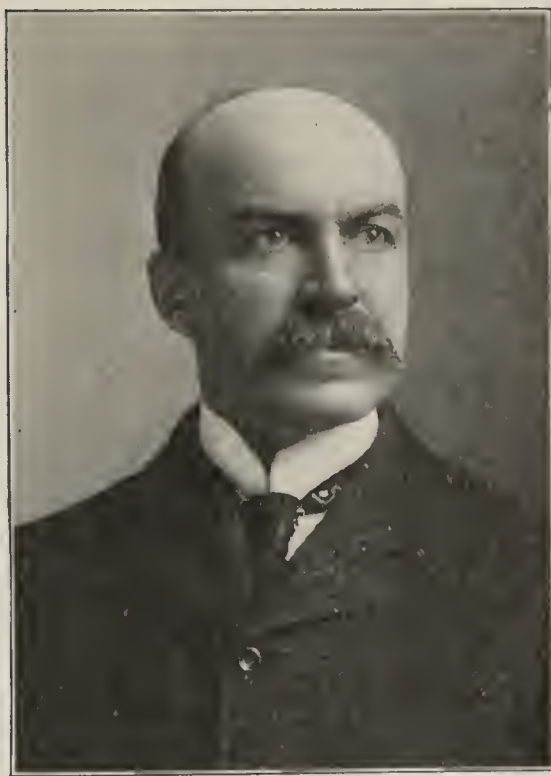
When you come to think about it, counting brick is just the same as counting money, as most up-to-date manufacturers pay their labor on a basis of the brick actually made, and if they had some absolutely accurate device by which brick could be counted, or if not a device, some system which could not be beaten by the laborer, it would be of great value to the manufacturer. A discussion of the different operations in the manufacture of brick, by the different manufacturers all over the country would lead to a great deal of good to some numbers of individuals of the brick makers, in that they would be enabled to read plans adopted by their fellow manufacturers.

This is a crude suggestion, of course, but I hope you will understand what I am driving at.

Our readers will agree with us that these two letters were worth while reading. Who of you have similar inspirations? Let us have your ideas and suggestions.



Philip Goldrick, a Hudson River
Brickmaker.



J. L. Eisenhart, Horseheads, N. Y.



C. O. Noll, Local Mgr. Kansas Buff
Brick & Mfg. Co.

(Continued from Page 482.)

address, like the present one, made an impression upon me)—I promised him as soon as I got back home and I made a pledge that I would carry out that suggestion and request, and this I did.

And there are other things that we can do. I think that we should take this up. I do not know whether the publishing in our minutes of this address that we have just listened to is sufficient or not.

Want Paper Printed in Pamphlet.

It seems to me that it would justify the printing of this address on fire prevention in pamphlet form by itself, and have that distributed, not only among our own membership, but throughout the country. It might cost something, but it would be money spent in a proper direction. The record of our minutes is, in a measure, a thing that is buried. It comes to our members and comes to us some two or three months, perhaps, after the proceedings of the convention, and it is put away perhaps on a shelf or in the files, and that will be the last of it; but, if such an address as we have just listened to could reach us in our homes, and not only reach, as I have said, our own membership of this Association, but others to whom we can send this address, it seems to me that it would do a great deal more good, and be a great deal more effective than simply publishing it in our printed proceedings.

SECRETARY RANDALL: I think Mr. Ittner's suggestion is a wise one, and I will arrange to publish the paper in pamphlet form at once—that is, within the next two or three weeks, and send it to members; but there has been another suggestion offered here, and you might take that home with you, and that is this, that while these pamphlets are away ahead of some, they do not have near the influence of a presentation such as we have had here this morning, and the thought occurs to me why cannot we get our local communities interested in this proposition.

Almost a majority of the members in this audience are interested in their local Boards of Trade and various public organizations; why could we not arrange to do this locally? I am going to try to do it, if I can, at our place. I am going to try to arrange at the proper season to have a lecture from just such a gentleman as Mr.

Palmer. He has associated with him other men who are well informed on these subjects, and are very able speakers, and if they can come and give us a lecture on this proposition and so really enlist the active interests of our own home people it would be very beneficial. I believe that that sort of a course of instruction throughout the country would result in great good.

M. E. GREGORY: In order to put the question, and get this matter before the convention, and in order to provide the members with copies of this excellent address, which, by the way, I believe each member of this Association may be instrumental in getting printed in his own local paper, and therefore reach the people, I move you that the Secretary be instructed to have sufficient copies of this excellent address printed so that he may send each member of the National Brick Manufacturers' Association a copy and that they may procure as many additional copies as they wish at cost.

R. G. EISENHART: I second the motion, Mr. Chairman. (The motion was carried unanimously.)

Orton Wants Lecture at University.

PROF. EDWARD ORTON: I want to say that Mr. Randall got ahead of me in making his suggestion, but I got ahead of him in trying to carry it out; because I was at this very hour talking to Mr. Palmer trying to get from him a promise to come down to our State University and talk to our students there, for I believe from what he has been telling you people here this morning, that you are probably case-hardened in iniquity, but these boys growing up have a better chance to do something, and I believe our university is a good place for this lecture to be heard.

FRANK WHITE: I want to say that I am ahead of Mr. Randall. I had an occasion a year ago to make an address to the Board of Trade at Annapolis, Md., and I took as my subject the fire waste. It resulted in the extension of fire lines and a resolution of the minutes to rectify and remedy their laws relative to fires.

PRESIDENT ROGERS: If there is no further discussion on this question we will take up No. 3 on the program: "The Brick Salesman," by Albert D. Klein, of Baltimore, Md. The statement that he lives in Baltimore

is an error; he now lives in Omaha, Neb., and is manager of the Sunderland Brothers Co.

Mr. Klein, being introduced, read the following paper:

The brick salesman of today has opportunities which were impossible a few years ago. He can be classed with the best of the professional men as a public benefactor, if he so wishes. He should rank with the artist, the sculptor, and the composer of lyrics. This may seem far fetched and appear to be poetic license, yet, if you stop to reflect, you will agree with me. The artist applies his brush dipped first in green, then yellow, follows up with red, and afterwards all the colors of his palette, and the result is a picture of marvelous beauty. The sculptor, likewise, with the raw material of his profession, produces a work of art admired by all beholders. The musical composer assembles the several notes of the octave and, in the many wonderful combinations possible, produces glorious music. Now then, the brick salesman, by a careful study and application of his materials, can produce a picture, a work of art, and a glorious composition of an imperishable nature in the shape of a beautiful brick wall.

See what a few years have produced in the way of artistic brick work by just a few brick salesmen. Look what Parker Fiske has done to elevate the profession of selling brick, and then again—Chapin of Cleveland. I could mention more names but these two are sufficient to illustrate the point.

A successful brick salesman should first serve an apprenticeship in the actual manufacture of brick, not, necessarily, digging clay or pushing a barrow, but be in an intimate daily association for a year or two with the processes and difficulties of brick making, whereby a study of the craft from the clay pit, bank, or mine, down to the brick loaded on the car for shipment is possible. Then observe and criticize the bricklayer at work and finally study and criticize the finished wall. By this time, you have the basis of a good brick salesman. He will not make extravagant promises of the impossible to the owner, architect, and contractor. To the contrary he will be of service to all three in suggesting the "right" brick and then suggesting how the best results in the wall are obtainable.

Tells of a Salesman Who Failed to Sell.

Too many men selling brick today, follow the lines of least resistance and really become, thereby, nothing more than an order-taker. To illustrate: Some years ago I asked of a certain salesman how he started a sale, and he said: "Well, if they come in the office, I greet them pleasantly and let my visitors look at my panels or, if I go out of town on a deal, I spread my samples out for inspection. I never suggest any brick. Finally, after looking them all over, the customer will fix his eyes on one or two brick, then, when I see he is interested, I go to it and sell him the brick he likes." Now what is the result of such salesmanship. Nothing more than a lot of abortive attempts at a city beautiful; a colonial residence of a brown press or enameled brick, whereas the salesman, by judicious and diplomatic effort, could have induced the buyer to select the "right" brick, resulting in a beautiful building and other owners thereby influenced to likewise building. One of the patrons of this "order-taker" told me he regretted building a brick house because, when it was completed, he was dissatisfied with its appearance, whereas had he built of frame he could change the color of the house at any time with the use of paint.

The average buyer of brick builds but once in a life time, and by buyer I mean the owner who really does the buying, selecting what brick shall be used in his building. Consequently, he knows nothing but what he sees when in your salesroom, and, if not properly led, buys a sample, whereas he should be guided to buy a wall. That is where many mistakes are made and why so many brick are rejected—simply because the salesman permits his customer to purchase a sample instead of selling him a wall.

I have had a case or two of this kind but finally succeeded in getting the owner's and architect's consent to start the brickwork upon the condition that they be allowed to approve or reject the work and after several courses of brick were laid my technical inspectors of a sample realized that it was a wall they wanted, and not a pretty sample of brick held in the hand.

The salesman who, persistently and everlastingly, knocks his competitors' products is harming himself most and discrediting the entire fraternity of brick salesmen and the brickmaking craft as well. Take yourself as a concrete example. If a salesman, with whom you had little or no previous acquaintance, devoted more or less of his time, and yours as well, in "knocking" right and left his competition, would you not naturally feel disgusted and place but little, if any, faith in his arguments? Of course, you would, and so does the buyer of brick. If the American people of today love any one thing more than another it is "Fair Play," and, surely, there is nothing square nor fair in attacking a man when he cannot defend himself.

In a measure, your employers are to blame for many of the conditions which are bad in the selling end of your business, because, if you would not permit them, they would not be done, and, by your silence when these matters are brought before you, you really sanction the actions of your salesmen. And,

again, you make the mistake of seeming to try any and every one who thinks he can be a brick salesman and is willing to work for small wages. Get good men, men to whom you must pay good salaries, and you will get results justifying your expenditure. Refuse to hire a salesman who has made many and frequent changes of employment, because such a man is always dissatisfied and is devoting more time in looking for a new job than in furthering the interests of your business.

In this manner, we can soon get rid of those who have absolutely no right in the business, as a successful brick salesman must be devoted and in love with the possibilities of his chosen line and feel that when helping an owner in the selection of the "right" brick he is doing a great public good.

Dunwoody Appreciates Klein's Paper.

VICE-PRESIDENT EBEN ROGERS: Is there any discussion on this subject? It is a very important branch of the brick business and should be thoroughly considered.

W. E. DUNWOODY: I think it is well to take notice of these papers and for members to state what they get out of them, that is, the point which is most interesting, or will give the greatest advantage to them.

One of the strongest points that I have noticed in Mr. Klein's paper—and I have made memoranda of all of the speeches, as I went along, was the fact that the purchaser who comes in to buy brick, comes in to buy a wall, and that is very often a matter that we lose sight of. When a man comes in to buy brick he so often depends upon the appearance of the individual brick sample which you put before him. But if you could get that man away from the fact that he is not buying a piece of pottery to put on his table or put into his library to be contemplated, but that he is buying something which he will consider in a mass, as the appearance of a wall, instead of examining the individual brick, you will very often be able to sell a man a brick which will give much better results than you can if you will allow him to keep his attention entirely fastened on the individual brick. That is one of the points that I got out of Mr. Klein's address, which I appreciate very much.

VICE-PRESIDENT RODGERS: Is there anyone else who wishes to discuss this paper? If not, we will pass to the next number.

SECRETARY RANDALL: Mr. President, and gentlemen of the convention: There is one very gratifying side to our present meeting, not only because of the harmony which prevails, and the interest and spirit manifested, but the association is in very great demand. We have more invitations from important centers inviting us to hold our next convention there, than has ever come to two or three conventions previously.

New Orleans is prominent in the list, and eastern cities, a number of them, and we also have an invitation from the far west.

The gentleman who is from San Francisco is a little more patient than most of the others; he does not urge us to come next year, but he wants us in 1915, at the Panama Exposition there. (Applause.)

That gentleman, who is the president of the Exposition Bureau, is with us, and his time is very limited, and he would like to speak to you for five or ten minutes, if it is your pleasure. Do you care to interrupt your proceedings and hear him?

(Cries of "Yes, yes.")

SECRETARY RANDALL: Mr. Frank L. Brown, of the Panama-Pacific Exposition. (Applause.)

Pictures Great Future for Clay Products.

FRANK L. BROWN: Gentlemen: California thanks you for the opportunity of being heard. I bring you a message from the western sea. I think you all realize and appreciate the fact that in this discussion of the loss by

fire that has just been given us, through this very instructive paper, that we can furnish you an example of a real, first-class, twentieth century fire; greater in its magnitude than all previous exhibitions of Rome, Chicago, Baltimore and Boston, and the other small cities were all lost when we came to give you a real, first-class, twentieth century fire, which covered four and one-half square miles, and burning some thirty thousand buildings; the loss being approximately 720,000,000 of dollars. We recovered, thanks to the insurance companies, about \$188,000,00, leaving us shy a mere trifle of about \$500,000,000; and in addition to that we have had to raise about \$400,000,000 more to rebuild the city.

It so happened that, coincident with the rebuilding of our own city, this United States government was digging a little ditch, connecting two ponds of water, that are of infinite importance to all of you gentlemen. That little enterprise cost five hundred millions of dollars, so that it happened that the building of the canal by the United States government at the cost of half a billion dollars, connecting the two greatest oceans of the world and the rebuilding of the city of San Francisco after the greatest conflagration of all ages occur at the same time.

Now, in 1915 we want the opportunity of celebrating these two great events; and we want you gentlemen to join in that celebration.

I think, possibly, you cannot fully comprehend its importance, but travel through the west will show you that there is an enormous demand for your products; our city itself is a city of frame buildings, and practically all of the cities on the coast, except our new, modern city of Los Angeles, are cities of frame buildings, and it seems to me that, if the Clay Products Exposition would vote now as a sense of their meeting, to hold their celebration in 1915 at San Francisco, that it would be one of the cleverest strokes of business that you possibly could do.

I want you people to understand that not alone are you going to have gathered on the shores of the Golden Gate all of the states of the union—some 37 states have already accepted our invitation—but you are going to have, for the first time in the history of the world, the nations of

SECOND HAND MACHINERY

Clayworkers, if you have some misfit machines — machines that have grown too small for your plant — sell them through our Classified ads and take what you get and use it toward buying a larger and more modern machine. Classified ads are watched by bargain hunters.

the far Pacific, China, Japan, Korea, the Philippine Islands, Samoa, Java, Formosa, Australia, New Zealand, the Fiji Islands and Tahiti, with us; in fact, for the first time, the Oriental and the Occidental civilizations are to be brought face to face at the halfway house on the shores of the Golden Gate.

It seems to me that here is an opportunity, not alone for the education of ourselves, but an opportunity of starting those nations of the Pacific, representing more than one-half of the population of the globe, on the great onward march of civilization and progress that must and will make the Pacific Ocean the theater of the world's greatest events.

Offers Permanent Site for Clay Show.

After meeting President Penfield of the Chicago Clay Show the other day, I took the liberty of telegraphing to the president of our exposition, Mr. Moore, asking him if a suitable site could be provided for your exposition to build a permanent building, or at least a building indicative and representative of what the clay products are, and I have this morning received the following telegram:

Referring clay products proposition director of exhibits states that clay products classified in department of mines and metallurgy, which is not yet organized and no department chief appointed. He states location could be secured for an artistic brick and tile building but prefers not coming to any definite decision until after conference with President Penfield. You can assure President Penfield of the pleasure we will take in meeting his wishes.

Now, gentlemen, I do not know how to put it more forcibly than to state to you that the eyes of the whole civilized and uncivilized world are focalized on the Pacific Coast. The building of the Panama Canal, and I presume you are all familiar with that great undertaking, is attracting world-wide interest. I found in London and in Europe a much greater interest than I find right here in our own country.

I find the statesmen and the financiers of the European nations are looking with wide interest to the development that is going on here. I found the great transportation companies of the world are all planning to send their ships through the Panama Canal in 1915, the Royal Line, the Cunard Line, the Hamburg-American Line, a line from France, a line from Spain, and even a line from far away Norway. I met the captain of the Norwegian line and he said they were already starting to build their ships to run a line direct from Norway to the Pacific Coast in 1915.

South America, too, is active. They are spending seven hundred and thirty millions of dollars to improve their harbors and build more lines of ships.

Gentlemen, there is a great world-wide movement going on today that is more important in its scope and progress, and more potent in its consequences than any similar world movement since the discovery of America by Columbus.

It seems to me that this convention cannot do better



than to take note of this great movement, and put itself right today in the foreground by deciding that it will make a suitable display of its products in 1915. And that you will all go out there and give yourselves a liberal education, because, gentlemen, it is a liberal education, and I do not believe any American citizen can be a really good American until he has first crossed the continent and comprehended its magnificence.

I hope you will do this and all join together in developing that great western country. Gentlemen, I want to thank you and in closing to give you a little sentiment that we adopted some time ago:

"Come and lift the latch of the Golden Gate; it swings on hinges of hospitality." (Applause.)

PRESIDENT ROGERS: Mr. Brown, we thank you very much for your cordial and interesting invitation; I am sure the Executive Committee of our Association will give it every consideration.

MR. BROWN: I thank you. Shall I turn this telegram over to you?

Canada Buys Brick from U. S.

W. P. ALSIP: I would like to speak about that salesmanship paper just a minute. Coming from Winnipeg, I wish to say that whenever we buy brick from these United States for facing our buildings, we ship direct from Pennsylvania to eastern Canada and as far west as Calgary, and we ship from as far south as St. Louis, to face and make artistic our buildings. We have figured our salesmanship with a view of getting the best results. My opinion is that brick shipped from Pennsylvania, delivered on board, or at the ground where the building is being constructed, at \$40 per thousand, is about the cheapest commodity you can face your buildings with. We figure that this brick, at \$40 per thousand, costs you 24 cents per square foot of face wall. And comparing it with the stone that you excavate or quarry from the neighboring quarry, ten or twelve miles from the city of Winnipeg, we have them beat three to one.

You cannot get the cheapest kind of stone face for your buildings for less than 75 cents per square foot, superficial face measure.

And when you come to Toronto the cut stone will run from 75 cents to \$2.50, and better. It shows the possibilities of face brick. The salesman, if he gets real good and busy and knows his lesson, has very little to do, because face brick adds an appearance to a building second to no other material. And along that line, while we handle terra cotta and lumber and brick, the face brick proposition is very dear to my heart.

Now, if any of the gentlemen here are ever sojourning or passing through Winnipeg it will be a great pleasure to me, as representing the Alsip Brick & Tile Company and the Lumber Company of Winnipeg, to show them about our city and some of our beautiful homes, which I think you will find second to none in the country. (Applause.)

VICE-PRESIDENT RODGERS: If there is no further discussion we will pass to the next subject.

SECRETARY RANDALL: No. 4 on the program is: "Some Investigations of the Clay Products Section, Bureau of Standards," illustrated by Prof. A. V. Bleininger of Pittsburgh, Pa.

Prof. Bleininger tells me that there is an error in the program and that he has no slides with which to illustrate this paper. Prof. Bleininger, you all know. You need no introduction to him. He is here with his paper, and I want to say, while he is coming forward, that we are going to try to finish the program of this meeting. It

is a very good one. We are having but one session a day, and we are here now, and I trust the gentlemen will be patient and stay with us to the end if it takes us until 2 o'clock to finish this program. We may get through by 1 o'clock, but I think you all have had a late breakfast and can wait for your lunch. Please stay right to the finish and don't miss any of these good things.

ANTHONY ITTNER: Mr. Randall, mention the fact that Mr. Bleininger is one of Orton's boys.

SECRETARY RANDALL: They all know that, Mr. Ittner.

(Prof. Bleininger then read his paper which took up in an exhaustive manner the work done by the Bureau of Standards. This paper

The Bureau of Standards is part of the Department of Commerce and deals, as the name implies, with the establishment of standards for all kinds of measures, including the measurement of mass, volume, length, electricity, heat, light, etc., and at the same time it applies the methods employed in this work to the valuation and study of commercial products. Intimately connected with this activity are researches of all kinds, which throw light upon fundamental processes or phenomena. The main laboratories of the Bureau are located at Washington, with several branches throughout the country, of which the testing station at Pittsburgh is the most important one. This laboratory is equipped for the study of all structural materials, steel, iron, alloys, clay products, cement and concrete, lime, etc. The work deals with both the mechanical and the chemical study of the problems involved. As far as the study of the strength of materials is concerned most excellent equipment is available, including a large testing machine with a capacity of ten million pounds.

In connection with the mechanical testing department the work of Mr. J. E. Howard touches the clay industry in several important phases, as in the testing of brick and tile structures and in the study of brick pavements from a new and exceedingly important standpoint. The study of the deformation suffered by brick streets due to temperature changes has proven very fruitful, and Mr. Howard has shown just where maximum stresses may be expected to occur.

The Clay Products section, while not overstocked with machinery and apparatus, is in position to carry on considerable work. Since this plant has been repeatedly described it is not necessary to devote any time to its description. The main purpose of this paper is to record the work of the ceramic section during the past year. The problems which have been and are now being studied are quite varied. The kind of work selected by the section depends upon the resources available and the relative importance of certain new facts to the industry. Often, however, an interesting subject comes to our attention which cannot be studied, owing to lack of facilities or assistance.

The following investigations have been entirely or partly completed during the past year.

1. The relation between time and the temperance of vitrification. We all realize more or less strongly that the factor of time is an exceedingly important one in burning. We know that vitrification of a clay or shale may be accomplished in a short time at a higher or after a longer time at a lower temperature. But we have had no definite information as to the exact relation between these factors, and the temperature limits within which it holds, for different clays. Such work has been carried on with five clays of different types and is ready to be reported.

2. Paving brick investigation. Under the direction of Prof. Orton, of the Ohio State University, and in co-operation with the National Paving Brick Manufacturers' Association, the brick pavements of a number of cities are being studied. Sections of both good and unsatisfactory pavements are taken up, and all the conditions of wear and construction carefully noted. The blocks are shipped to the laboratory of the Bureau at Pittsburgh, where the rattler tests are made.

3. The effect of overburning. In this investigation the vitrification range of several clays has been studied and the development of the vesicular structure followed. The difference in the behavior of safe and unsafe burning clays is brought out as well as the reason why certain clays and shales are unsuitable for the manufacture of paving brick, stone ware, and other dense bodies.

4. The burning behavior of a clay molded in the plastic and the moist state. In a brief investigation it is shown by numerical comparison that the same clay, when molded in the plastic

state, matures and vitrifies at a considerably lower temperature than when dry pressed.

5. The influence of direct electric current upon clays. Work was started along this line owing to the interest aroused by a European process for the purification of clays. Particles of pure clay when suspended in water are attracted by the negative and repulsed by the positive electrodes. The former phenomenon has been made use of for the separation of clay from impurities, the latter for facilitating the flow of clay through dies. In the work done so far it was shown that the degree of separation taking place depends upon the character of the clay, whether plastic or lean, upon the fineness of the material to be removed and upon the amount of salts present. The whole problem is complex and it is evident that the process is not applicable to all clays. It has been found impossible to remove finely divided iron oxide from plastic clays, as is to be expected. The entire subject is very involved and requires considerable investigation. Meanwhile any application of this method of purification should be approached cautiously.

In connection with this work it was found desirable to determine the electrical conductivity of clay slips and clays in the plastic state. This property, quickly and readily determined by means of the Bureau of Soils or more elaborate electrical bridges, was found very useful in estimating the contents of soluble salts in clays. Thus by simply grinding a known amount of clay in a definite volume of distilled water the conductivity of the mixture is a reliable index as regards the amount of salts present. The method is quite satisfactory for all but calcareous clays.

6. Special refractories. The modern demand for higher temperatures in the metallurgical and other industries has stimulated investigation along the line of high temperature refractories. Some work is being done in this connection, especially with mixtures consisting of fused magnesia and clay.

7. The softening of porcelains. Owing to the fact that no data are in existence as regards the actual softening of clays and bodies at the kiln temperatures such an investigation has been completed with porcelains. The actual deformation under a tensile stress of five pounds per square inch at different temperatures has been determined.

8. Compressive strength of clay as related to porosity. Since practically no data was available for the exact correlation of strength with porosity for different clays such an investigation was undertaken several years ago. This is now completed and for the first time we have such results before us. The work involved in this investigation has been carried on with great care. In testing the cubes of clay the bearing surfaces were ground true so that the use of plaster was unnecessary.

The work of the Clay Products section does not consist entirely of research. Tests for the several government departments, as well as for the geological surveys of states occupy a large share of the time. Thus co-operative work has been carried on with the U. S. Geological Survey, the surveys of Minnesota and Louisiana, and a number of other organizations. A great deal of work is also being done for private citizens where the information sought could be readily given or where the tests requested could not be made in the regular commercial laboratories. The most pleasant part of the work has been the close co-operation between the industries and the Bureau. This co-operation it is hoped will continue to grow and to result in wider and more far reaching service. (Loud Applause.)

ANTHONY ITTNER: Of course, I presume there is no time for discussion. We have five more papers to listen to, and the time is getting late, so that I presume the time for discussing this paper will be limited; but there is something I would say if I had the time, but I don't want to take up the time of the meeting.

SECRETARY RANDALL: Go ahead, Mr. Ittner.

Discusses Bleininger's Paper.

ANTHONY ITTNER: Mr. Bleininger mentioned one thing which was a primary feature and that was in connection with street paving. That is one of the most primary features in connection with it. The miserable character of the surface of the streets in some of the cities would disgust anyone with a brick pavement the very instant that they looked at it.

I spoke before the National Paving Brick Association, which used to meet with us before they formed their own



Clayton Potts, Treas. C. and A. Potts & Co., Indianapolis, Ind.

association, and I spoke to them on this subject before their organization. I spoke about the importance of the construction and it is one of the most important features in connection with the street paving. You can take a bad street paving brick, a poor sort of a paving brick, and lay it right and it will make a very favorable impression, while if you take the finest sort of paving brick, and put it on top of the earth and make a botch job of it, it would turn a person away from it. They would go to something else.

CHARLES J. DECKMAN: I want to assure our good friend Ittner that, by the time he reaches St. Louis, he will find on his desk a full line of the literature of our Association, which will show him that we have been preaching that gospel for eight years.

ANTHONY ITTNER: I preached it before you were born.

CHARLES J. DECKMAN: I am glad to know that.

PRESIDENT ROGERS: The Secretary will read the next number on the program.

SECRETARY RANDALL: Before doing so I will announce that I have a letter here, which I will not stop to read now, and I also have some very fine postcards here which give a view of a fine brick street. These post cards were given out with the compliments of the Kodak Company, and if any of you want to send post cards to your friends at home, you can have them, as many as you please.

The next on the program is No. 5: "Prevention of Whitewash," by Charles Hoshour, of Oklahoma City, Okla.

(Mr. Hoshour's paper will be printed in a subsequent issue of this journal.)

PRESIDENT ROGERS: This paper is open to discussion, gentlemen; to anyone wishing to discuss it. If not, the Secretary will read the next on the program.



M. J. Williams.



M. F. Williams.



A. F. Williams.



O. J. Williams.

Californian Tells a Few Reminiscences.

SECRETARY RANDALL: The next on the program, gentlemen, is an interesting paper: "Reminiscences of the Brick Business," by C. H. Frost, of Los Angeles, Cal.

Mr. Frost was with us the fore part of the week, but had to leave yesterday, and he and his son have both gone. There is nothing in the paper that would encourage discussion, I believe, and if it is the pleasure of the convention we might consider it read and include it in our proceedings, and thus shorten our program somewhat.

PRESIDENT ROGERS: It is so considered, Mr. Secretary.

SECRETARY RANDALL: The next in order will be: "Electric Drives in Clayworking Plants," illustrated, by Thomas E. Simpers, of Pittsburg, Pa.

Mr. Simpers spoke as follows:

1. A great deal has been written recently of the great need of more progress among the various manufacturers. Progress in the clayworking industry, among other things, means improving the quality of the product, and to improve the quality of the product it is necessary to secure increased economies in manufacture and improved methods of manufacture.
2. In the old methods of manufacturing brick, tile and other clay products, the machinery used was of very limited capacity, simple in design and operated, in a great many plants, by horse power. All the material was handled by hand labor, and the output of the various plants was comparatively small. The manufacturer made enough product for local demand and experience little or no competition.
3. In contrast to these conditions are the present-day methods of business and manufacture, whereby, because of competition, the very life of the clay product manufacturer depends on the manufacture of his products with the greatest economy and the securing in his plant of accuracy, rapidity, continuity and a well-designed plant for each department of the work, as well as the process as a whole.
4. The developments which are furthering the advance of this industry include, principally, improvements in the various machines which prepare the clay, improvements in the methods of handling the raw material in the various stages, improvements in the drying and burning processes and in engineering knowledge concerning the plants.
5. Electric drive is comparatively new. In 1890 it was in its infancy. In the time intervening, however, it has made enormous progress and now is a practically universal method of drive in all industries. In the steel, cement, textile and allied industries, drive by any other method has almost become a thing of the past, and in new plants being equipped electric drive is usually the only method considered.
6. Because of the expense of transportation of raw material, railroad facilities and supply of coal and water are important factors in the location of the clayworking plant. However, the use of electrical power, purchased from a central station, and there are now few portions of the country where electric power cannot be purchased, simplifies the question of location. In this case, water and coal become of secondary importance.

Sees Economy in Auxiliary Motors.

7. The most practical method of drive for auxiliary apparatus, such as brick-setting machines, haulage locomotives

and other traveling machinery is by means of electric motors. These machines bring facilities to the making of brick and tile and provide economical methods for increasing the output of the existing plants, and are of even more importance in large plants where the question of handling the product is a serious problem.

8. When the various machines or departments of a clayworking plant are operated by means of individual motors, there is greater assurance of continuous operation, as compared with central engine drive, in which case engine trouble means shut-down of the entire plant. Motors remain at practically constant speed throughout their operating range, which results in increased production, as compared with the plant driven by single steam engine, where the speed varies, not only with the boiler pressure, but with the variation in load. Due to the fact that electric motors can be applied at the closest position to the driven machine, the connecting apparatus, such as belts, gears, etc., are reduced to a minimum. As the driving units are of a comparatively small size, it is an easy matter to make slight changes from time to time to compensate for the wear of bearings, etc., thereby preventing undue wear of parts, due to the poor conditions of the machines. Fuses or circuit breakers are installed in the motor circuit as a protection against severe overloads, such as are caused by the clogging of the various machines, which cause damage to motor and the other apparatus. The possibility of shut-down, due to a machine breaking, is thereby greatly reduced.

9. In addition to the universal convenience and satisfaction of operation in the motor-driven plant, the results in recent installations of machines show a substantial reduction in the cost of production. It is estimated that a one per cent decrease in the cost of production will alone pay for the necessary apparatus and material for changing over from steam drive to electric drive in existing plants in approximately two years, so that all additional reduction in cost may then be considered as an additional profit. A summation of the various factors causing this reduction is:

- (1) Increased capacity of individual machines.
- (2) Facility in handling product.
- (3) Less trouble in securing labor.
- (4) Increased efficiency of labor.
- (5) Elimination of labor.
- (6) Decreased power cost.
- (7) Decreased breakage.
- (8) Prevention of shut-downs.

10. The advisability of central station service simplifies the building and installation of the clayworking plant considerably. In most parts of the country, power can be purchased at a reasonable rate, and is usually such that it would pay to purchase power rather than to go to the expense of installing a generating plant. It stands to reason that a firm, generating a large amount of power, can do it at a much lower power cost than the generation of a small amount of power, say several hundred kilowatts.

11. Central stations usually are in a position to furnish alternating current only, either 25 or 60 cycle, and for a private generating plant alternating current is usually best, because of the fact that by the use of this one is enabled to use induction motors, which is the simplest form of motor, requiring less attention and care than the direct current motor.

12. As a concrete example of the saving which may be effected by individual drive, accompanying views show the machinery layout of a building brick plant, which we changed from steam to electric drive. The motors were installed so that the machinery was driven in practically the same manner as it has been formerly driven by engine. After the installation of the motors, tests were made on the plant, the result obtained being shown by this curve. This shows conclusively the advantage obtained by the fact that the motors may be quickly and easily started or shut down, and also the

losses which might have been avoided if the motors had been directly applied.

Pays to Operate at Full Capacity.

13. The friction loss with no material going through the machines is sixty-two kilowatts. A considerable portion of this is lost through the line shafting, bearings and extra bearing, rather than in the machinery. This loss bears less relation to the cost of the finished product than the output of the plant increases to the full capacity of the machinery. This can also be seen from the curve. For instance, when the plant is working at the rate of 4,000 brick per hour, the kilowatt hours required per 1,000 brick are twenty-eight, while working at 6,000 brick per hour, the full capacity of the plant, the kilowatt hours per 1,000 brick are twenty-two and seven-tenths. This shows friction loss remains practically constant, also shows what has been effected in the way of saving in the cost of production if the plant had been laid out in such a manner that friction losses in transmission were avoided. This also shows the fact that when the demand for brick is less than the full capacity of the plant, it will pay to work the plant at full capacity for a period and then shut down until the demand warrants a resumption of work, rather than operate at any time at reduced capacity, as under this condition the friction loss represents a very large proportion of the power consumed.

14. As an example of the efficiency of motor drive, in the building brick industry, a detailed description of a modern motor driven belting brick plant is given. The plant consists of six permanent kilns, and electrically driven brick machinery, with a capacity of 60,000 brick per day. They employ twenty-six men, working ten hours a day. Owing to the limited capacity of the kilns, the pans and pug mills are operated approximately eight hours a day, and their average daily output is 28,000 brick. The induction motors are employed for the operation of the plant. The total installed capacity is 215 horsepower. The maximum plant is 130 horsepower and the annual load factor for the ten-hour day is twenty-four per cent. The average total energy consumption per 1,000 brick is twenty-six and four-tenths kilowatt hours.

15. Material (shale, etc.) is obtained from a bank a short distance from the plant and is carried to the belt conveyor by wheelbarrow. From this point all the brickmaking processes are operated by motors, the handling of the brick being practically the only exception.

16. During the cooling period, the air is drawn from the kilns, passing through the drying tunnels containing the green brick. When it is desired to move the dry brick the draft of the hot air is cut off and the air in the tunnels is cooled by means of an exhaust fan. The machinery in this plant is driven as follows:

Two nine-foot dry pans, each driven by a forty horsepower, 840 revolution per minute motor. These motors also take care of the conveyors to and from the dry pans.

A pug mill, driven by a forty horsepower, 850 revolution per minute motor.

Blowers, driven by a fifteen horsepower, 1,700 revolution per minute motor.

Disc exhaust fan, driven by a five horsepower, 1,700 revolution per minute motor.

Auger, conveyors and repress, driven by a seventy-five horsepower, 685 revolution per minute motor.

17. It will be noted that the requirements of a fire brick plant differ somewhat from those of the common building brick plant. Many of the shapes and sizes are special, necessitating hand molding, and the process is, therefore, not so regular.

18. This machinery relates to an electrically operated fire brick plant covering an average output of 1,300 tons, one-third of which is hand molded. The total capacity of motors installed is 157 horsepower, and the total demand is 130 horsepower, with a load factor of twenty-seven per cent. Total electric energy per ton output is approximately twelve and two-tenths kilowatt hours.

19. The machinery in this plant is as follows:

Nine-foot dry pans, driven by forty horsepower, 850 revolution per minute motor.

Twelve-foot pug mill, driven by forty horsepower, 850 revolution per minute motor.

Sixty thousand brick per hour auger, driven by fifty horsepower, 850 revolution per minute motor.

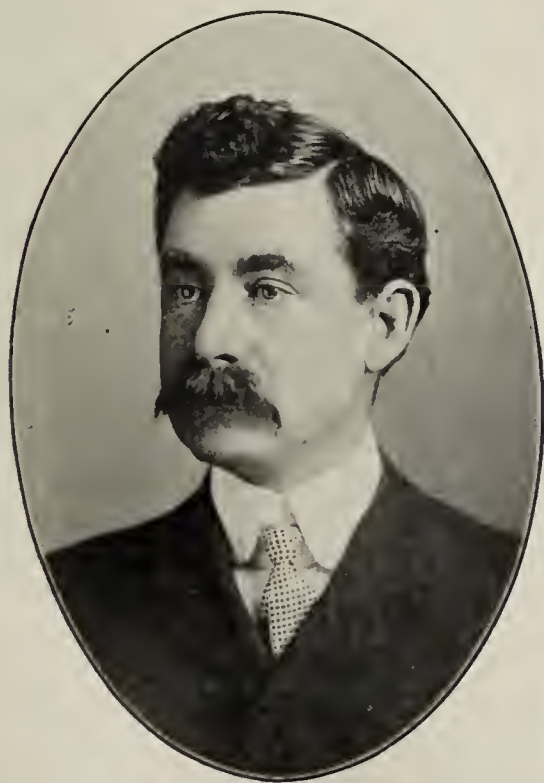
Brick press, driven by five horsepower, 1,700 revolution per minute motor.

Brick repress, driven by ten horsepower, 720 revolution per minute motor, two of them driven by five horsepower, 1,120 revolution per minute motor; pump, driven by a two horsepower, 1,700 revolution per minute motor.

SECRETARY RANDALL: Gentlemen, there is quite a number of you who have not as yet secured your banquet tickets. You know how these conventions are when we have exceeded four hundred people in attendance, and the chef must know by noon today what he is going to give us—not know what he is going to give us, he knows that, but he don't know the quantity, and I wish that those of our friends who want banquet tickets would, immediately after adjournment at noon, come to room 1102, or to come there as soon as possible after adjournment, if we run until one o'clock, and get their tickets, so that we will know how many are going to be at the banquet tonight.

The chair appoints as a Committee on Resolutions the following: Marion W. Blair, of Pennsylvania; W. L. Vermilya, of Texas; Parley W. Davis, of Utah; C. C. Dyer, of Massachusetts; B. H. Richards, of Indiana; W. P. Alslip, of Canada; Cyrus Borgner, of New Jersey, and Charles Frank, of Michigan.

PRESIDENT ROGERS: The discussion of the paper on "Electric Drives in Clayworking Plants will be led by Mr. George O. Berry, of Georgia. If he is in the room I wish he would come forward. I understand that he



R. D. Lindsey,
Denver, Colo.



Spencer M. Duty, Deckmann Duty
Brick Co.



C. A. Bloomfield,
Retiring President, N. B. M. A.

has recently equipped his plant with electricity. Mr. Berry.

GEORGE O. BERRY: Gentlemen, Mr. Randall wrote me early in January—I don't know how he found it out—but he stated that he would like me to produce a paper at this convention on electricity. I wrote him that I was just installing it, and knew nothing about it, and he wrote back that he would be glad if I would lead in the discussion.

I was like the Irishman who was challenged to fight a duel with Casey. He said he could not fight with swords, but that he preferred pistols; and he said to his second that he wanted to impress upon him one thing, and that was that he wanted to be put ten paces further off from Casey than Casey was from him. I want to get off as far as possible.

I have prepared a paper, but there has been one already read. If the gentlemen insist upon it I will read it. I have but few remarks to make outside of it.

The manufacture of brick is almost as old as civilization. The first record that we are able to find regarding brickmaking goes back approximately six thousand years. These brick were sun dried and made of Nile mud. Specimens of these brick were found in recent excavations of the old temples of the Egyptian gods. If we consider the amount of labor which was used in the making of these bricks and the amount of labor employed in the making of brick today we can see the vast improvement which has been made by the introduction of modern machinery. Although it has only been within the last decade that anything like modern methods have been employed in this, the oldest of industries, at the present day the output of the brick plants in this country is millions where the output of ancient times was one.

The greatest results accomplished in brickmaking today can be attributed to the electric motor, because by its introduction it has simplified and made possible to a great extent the large plants which we see dotted all over the country. The motor drive is unequalled for convenience and reliability. These facts have been demonstrated by the severest tests obtainable.

Alternating current motors are preferable for this class of business, due to the fact that they are compact and have strong mechanical design, and the efficiency is very high under the varying loads which they have to carry. As a rule they have large overload capacities and no wearing parts except the bearings and slip rings. Some types of alternating current motors do not have a slip ring.

The greatest argument in favor of the motor driven brick plants is that they are the cleanest, safest, most flexible as regards plant layout and the power is the cheapest power obtainable. With the use of electric drive the salary of an engineer is eliminated, also the cost of engine maintenance. The handling of coal and ashes is reduced to a minimum. The large space occupied by engines is utilized for manufacturing or storage purposes. The output can be increased at a minimum expense for machinery, and in a shorter time than would be required for new engines should they have to be bought. Uncertain and unsatisfactory service due to poor engine equipment is supplanted by reliable twenty-four hour service, which is at the plant's call any time during the twenty-four. Repairs due to shut down caused by the breaking of either the engine or belts is eliminated, as motors are always placed in such position that unnecessary belts and jack shafts are eliminated. The elimination of belts and shafting will of necessity reduce the friction load; this means a corresponding reduction of the amount of power required.

See Benefit in Safety to Employees.

A point which cannot be brought out too strongly is the material reduction in danger to employees due to the small number of belts and countershafts used. Too much stress cannot be laid on the fact, especially in the small plants, that with motor drive a more uniform grade of brick is made, due to the closer regulation of speed obtained by the use of electric motors over steam engines. This is accounted for in several ways. First, slippage of belts is reduced; second, it does not depend upon a constant steam pressure like engines. Where rates are fair and motors have been installed properly a con-

siderable saving is shown. This saving ranges from thirty to fifty per cent, and in some cases it has been known to go as high as sixty per cent, but the average saving shown is approximately forty per cent.

As a rule you will find after a heavy rain that the clay pits are generally filled with water to such an extent it makes it almost impossible to excavate the clay. This condition can be relieved by the installation of electrically driven centrifugal pump, the capacity of pump and size of motor depending entirely upon local conditions. The old style shovel which has been in use for a good many years is being gradually supplanted today by the electric shovel. Although the cost of the latter shovel is somewhat higher than the former, as a rule the difference in the cost of operation more than justifies the installation of the electric shovel. The machine for hoisting the clay from the pits to the plant can be a specially designed drum hoist with the motor attached, or the old hoist can be belted direct to the motor. Of course, there will be some cases, but they will be very few, where it will be impossible to change over steam driven hoists to belted hoists. Coming into the plant proper the method used can be either group or individual drive, or a combination of both. Some plants prefer, due to their arrangement of machinery, to belt direct to one line shaft and from this shaft the belts are run to the different machines. Other plants prefer to either belt or gear motors direct to the different machines, while still others use a common line shaft for part of the machines driving the other machines with motors geared or belted direct. The size of the motors in any case depends entirely upon the make of the machine and the nature of the clay which is being worked. Where forced draft is used in the kilns the fan can either be of a direct connected or belted type.

In changing over the plant of which I am the owner, we belted a fifteen horse power, 1,200 revolution per minute motor to an old steam driven drum hoist. A twenty-five horse power, 1,200 revolution per minute motor was belted to a jack shaft and from the shaft we belted to the feeder and disintegrator and conveyor. A fifty horse power, 900 revolution per minute motor was belted direct to the machine. In this connection it might be well to state that we are turning out our task, which is 60,000 brick, in about seven hours, when formerly it took about eight and one-half hours. The tests which were run when the power was first installed, showed a consumption of about eight kilowatt hours per thousand brick made.

Cites Actual Figures as to Cost.

The following information regarding the consumption of current per thousand brick may be desirable:

Plant 1—Capacity, 30,000 brick per day, driven by one motor, sixty horse power, averaging about 11.2 kilowatt hours per thousand.

Plant 2—Capacity, 90,000 brick per day, driven by four motors, total capacity, 170 horse power, averaging 12.7 kilowatt hours per thousand.

Plant 3—Capacity, 20,000 brick per day, driven by one motor of fifty horse power capacity, averaging 14.2 kilowatt hours per thousand.

Plant 4—Capacity, 30,000 brick per day, driven by one motor, thirty-five horse power capacity, averaging 8.21 kilowatt hours per thousand.

Plant 5—Capacity not given, driven by two motors, one fifty horse power and one five horse power, averaging about 3,250 kilowatt hours per thousand.

Plant 6—Capacity, 50,000 brick, driven by two motors, one 100 horse power and one fifty-two horse power, averaging 15.8 kilowatt hours per thousand.

Plant 7—Capacity, 50,000 brick, driven by four motors, one 100 horse power, three ten horse power, averaging 9.45 kilowatt hours per thousand.

Explains System Installed in Plant.

MR. BERRY: I was very careful of what the results of my bill would be in the first thirty days of operation, and when it came I opened it very slowly and cast my eyes upon the figures, and I was surprised to see that I was making brick for about 8.2 per thousand, and I was agreeably surprised. Everything worked smoothly, the machinery run regularly from 6:30 in the morning until 1:30, and 60,000 bricks are made, and the current is cut off and that ends it until the next morning. So far it is very satisfactory indeed. Otherwise than this I am not up in electricity enough to give you any opinion outside of the little experience I have had. I thank you gentlemen. (Applause.)

A MEMBER: What is the charge for electricity?

MR. BERRY: Two cents is what we agreed on.

R. C. PENFIELD: The contract is for two cents?

MR. BERRY: Yes.

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MR. DUNWOODY: Does that include the service charge also?

MR. BERRY: Yes, I will tell you about that, gentlemen. My coal bill last year was enormous. I have actually cut it in half. I am drying brick with less pressure on my boilers. Before it took 90 pounds of steam, and I have ten Standard dryers, and it took 90 pounds of steam, and it kept the firemen hard at work to keep the steam up. And the night firemen seemed to pattern after the day firemen in putting in the coal. But since I have changed to electricity, why, my firemen in the day time keep a nice live fire and he does not have to carry more than 60 pounds of steam. I dry my brick with that pressure just as well as I did with 90 pounds. I don't know why it is, but that is the fact. I take out 92 cars of brick every morning, for it takes 92 cars to carry my plant, and I am entirely satisfied.

Paper Stirs Up Considerable Discussion.

CHARLES MILLER: I have been an advocate of electrical driven plants for some years, and I just want to fall in and back up what our friend has said. You have a far better way than we. The first year we ran our electrical driven plant, it cost us $17\frac{1}{4}$ cents per thousand brick; the next year it cost us a shade more for some unaccountable reason. I cannot say whether they were planning to get a little more out of us or not, but it cost us a shade more, not much, but half or three-quarters of a cent per thousand.

I remember the first paper that I read, like our friend here, I tried to explain the elimination of danger in connection with electricity, and a friend of mine who was in the audience after I sat down stood up and he said: "You talk about the elimination of danger?" Of course, there is the greatest danger of death in it—that up at Sing Sing, N. Y., they put men to death with it."

But I perfectly agree with my friend that there is no danger in using electricity if it is properly handled, but I believe that anyone who is installing a plant electrically driven, would be very unwise if he did not look into the dangers of electricity for manufacturing brick. We have just completed, but we have not as yet started, a plant which is fully electrically equipped. In the plant that I am operating today, we dry by exhaust steam, and we drive that plant with an engine, but we use two motors also.

MR. BERRY: I want to say one thing about our power. We have an immense power plant in our city. The company recently built three power plants by water, and it has one auxiliary run by steam in case of high water. The last power plant was completed last fall. It is called "Goat Rock Dam," and it is 17 miles above the city, and that is where I get my electricity. They are urging everybody to use it. All of the manufacturing plants in my city are using it, and they are carrying it to other towns 75 miles away from Columbus, carrying it as far as to West Point, and they are carrying it all over the country, for they have got plenty to spare, for the dam is of 47,000 capacity. The dam is 70 feet high and 15 feet wide, and it has got a big tunnel through which you can drive. We have an immense power right near the city. We have plenty for our use. And they have also just recently completed a dam of 40,000 capacity.

F. L. CAPERS: I simply wanted to state that I agree with the gentleman that the cost of electricity was a very important thing—the most important thing. As a brick-maker I have 27 motors, and four of the 50 generator, operating in my plant. It is necessary that a man get the right price. For instance, they will come to you and state that they will give you a rate of two and one-quarter



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Wilson Eyre, Philadelphia, Architect.

per kilowatt hour. When he comes around again at the end of three months to take the matter up, you want to start to talk about that 2-cent rate that he quoted, and when he comes around again the third time to take it up, you want to talk about that 1.75 rate, and before you get through you will get what we got; that is exactly the way we worked it and we got a rate of 1.60 per kilowatt hour. You have simply just bluffed the gentleman into giving you this price; and you know that even at that rate he has got three to four hundred per cent profit.

Claims Power Company Makes Overcharges.

SECRETARY RANDALL: The gentleman's statement that there is three to four hundred per cent profit is no exaggeration. I have been investigating electrical power and prices on another line of work, and I know that he is correct. They can make electrical current as low as a quarter of a cent, and sometimes they can make it for less than one quarter of a cent, and they don't think anything of charging us four or five cents more. They can make electrical power with steam, or, where they have producer gas or oil, easily within half a cent. The gentleman is right, all right.

MR. MOORE: I can give you a little data. I made a contract in a city out west about four years ago for \$17.50 per horsepower per year.

A MEMBER: I would like to ask the gentleman in making brick at 8 cents a thousand, whether he is using the dry plan or a pug mill.

MR. BERRY: I use a fat clay.

MR. MOORE: We are installing a new plant to be driven with electrical power, and we have a new law which went into effect. They charge us a fixed charge for one horsepower. They charge us a cent per kilowatt for all power used, and they charge us forty per cent of the first horsepower used, and 50 per cent for more, if you are on their off peak load; that is, if you shut down before half after 4 from October to March, they charge you a dollar per kilowatt fixed charge; but if you are on their peak load with your fans or driers, they charge you \$2 a month for your fixed charge. That makes the rate approximately down to about \$1.60.

PRESIDENT ROGERS: If there is no further discussion, the Secretary will read the next number.

A MEMBER: I would like to say that it is a good idea sometimes to insist on having a maximum demand meter put on to test your current. It pays very well.

ALFRED YATES: I believe that you cut these discussions off too quickly. You are discussing the cost of the operation and it may be proper for me to ask questions of construction. I see on the canvass that you have got directly connected power.

I have had a little experience in those lines, and I want to inquire if there is not an excessive amount of vibration in the operation of that machinery which is connected directly. I know that my early experience tells me that with rollers it would almost shake the buildings down at times with that direct connected power. I want to know if this same effect is made with the directly connected plant.

SECRETARY RANDALL: Mr. Simpers, can you answer that?

THOMAS E. SIMPERS: There is no more vibration caused by the machinery itself, whether driven by electric motor or steam, but I think it is in its gears caused by direct connection, where the vibration occurs and where the gears are large, unless they are kept very carefully in line. It is possible to keep away from a gear drive and go to a belt drive, and in that way you do away with vibration.

Pleads for Ceramic Schools.

PRESIDENT ROGERS: That answers your question, Mr. Yates. What is the next number?

SECRETARY RANDALL: The next number is "The Training of the Technical Engineer for Ceramic Service," by Prof. H. K. Benson, of Seattle, Wash.

(Prof. Benson read the following paper:)

The subject selected for discussion is intended to follow up a very excellent paper presented before this convention a year ago by Mr. Dwight T. Farnham, the superintendent of one of the largest clay products companies on the Pacific coast. In the paper referred to, which is entitled "The Technical Man as a Commercial Asset in the Clay Industry," Mr. Farnham outlines a plan of getting suitably trained men for his industry through a system of apprenticeship courses open to graduates of technical schools. The writer has kept in touch with this plan, which, although not new in principle, had not been followed before to any extent on the coast with respect to the graduates of technical schools. It seemed at the outset an ideal proposal, and in the conferences with Mr. Farnham, the writer fully shared in his enthusiasm. It seemed to us an ideal means for co-ordinating theoretical instruction with practical working details on the same subject. As you will recall by a perusal of his article in your proceedings, Mr. Farnham points out several of the things which must be "unlearned" by the technical graduate, in order thereby to accommodate himself to the environment of practical conditions. In this attempt to adjust himself to a new set of conditions, Mr. Farnham speaks clearly to the point when remarking on the "know it all" attitude which some of our technical graduates carry along with their diplomas, and says: "When a man secures his knowledge by actual experience, he usually has made mistakes enough from which he has suffered to learn that it doesn't pay to be too sure about anything in the clay business—that generalities have a way of developing mul-

titudinous progeny in the way of exceptions. When a man has learned from a book that there are five things that may develop during a certain operation, together with the five ways of meeting the things he is reasonably certain to feel that the problem should hardly be known as such. He therefore goes merrily ahead, meets the five developments valiantly; he is a little surprised, perhaps, by a sixth contingency which the book did not say anything about. This doesn't worry him much, though—a mere detail. The kiln is opened—it goes over the dump. Perhaps he follows it, the most hurt and injured and surprised man in the world. If he hadn't been quite so certain, having learned from the book "all there was to it," he would have proceeded slowly and more cautiously, and would not have experimented until he had the actual experience with which to back up his book knowledge.

Finds Few Graduates Stick.

To make the technical graduate "fool proof against himself" and to give him time to grow into the environment of the factory and the market instead of the atmosphere of the theorist and dreamer, it would seem that such an apprenticeship course should have proved ideal. However, of some thirteen technical men enrolled as apprentices, but one remains at present. This failure of the system does not show that the system is wrong, for an investigation of the causes of desertion shows that some took up the work in response to the "call of the West," others were "seeing America first" and tarried a little, while some received a "call" higher up. There were others, however, that left because firing was such dirty work, or because the manager did not consult them frequently enough, or because the folks at home did not consider their recently graduated son as filling a position in keeping with the dignity demanded by his training. These results have brought about a reconsideration of how men may be fitted for ceramic service, and the writer is pleased to present a line of training which is comparatively new in the country and quite often requires explanation on the part of the manufacturer. This training is included under the name of chemical engineering.

It may be difficult at first to see the relationship of chemical engineering of ceramics, but an analysis of the work usually done in such courses will lead to the conclusion that the chemical engineering course is a series of fundamentals, and not of details—in brief, that the product of this course, the chemical engineer, is the possessor of a technically trained mind, and if gifted with a fair degree of human common sense, such a man can readily grasp the problems of the industry entrusted to him and bring strong co-ordinating fundamentals to bear upon their solution. So much for the text of my discussion. Let us next examine the nature of the work done in chemical engineering. First, the term does not mean, as one good woman recently asked, the ability to "run a chemical engine." It is obvious that chemical engineering should mean fundamental training as an engineer first, with chemical processes as a specialty, just as electricity constitutes the special interest of the electrical, and power of the mechanical engineer. These fields of engineering are now so closely interwoven that in engineering educational circles it is the frequent comment that "what is good for one engineer is good for another."

Accordingly, the chemical engineer, as his first fundamental, is given those courses which are prerequisite to the training of any engineer. Among them are drawing, surveying, mechanics, hydraulics, steam engines, machine design, electrical measurement. In these courses are developed the theories upon which engineering practice rests and upon which can be built any specialized line of work. This chemical engineering consists of, first, the fundamental courses in chemistry, including general chemistry, analytical chemistry, organic chemistry and physical chemistry, together with supplementary courses in applied chemistry, such as fuel analysis, water examination, and in geology, bacteriology and fire assaying.

In brief, this outline represents the groundwork of the chemical engineer's training. He has the same mental make-up as the tunnel builder, the gas engine expert or the electrical power man. But he differs from these others in that his work deals not with certain modes of machinery but with certain processes capable of producing many of the commodities necessary to modern life.

Explains Possibilities of Chemical Engineer.

Now, what service can the chemical engineer render to the clay industry in particular? You possibly have noted that the course of study has not included any special work in ceramics. Probably in geology and in some of the applied chemistry the student has been brought to the consideration of clay materials. But it all has been quite elementary and general. Can we then, nevertheless, expect the chemical engineer to serve the clayworking industry? Our answer is, just as surely as he can control the process of making cement, or regulate the mixture in street paving, or direct the fermentation in a distillery. The details of these industries are brought to him after he gets into the industry. Like the practical man, whose proud boast is that he is self-made, but whose technical training has in reality been furnished by the indus-

try, the details are unfolded day by day until they serve as his working tools.

On the Pacific coast in our educational work we have been forced into the position which is advocated in this discussion. Our manufactures are scattered over a large territory and they are diverse. Consequently we cannot produce cement chemists, ceramic engineers and especially trained men for every field of technical endeavor. Instead, we have aimed to furnish men trained in the principles and familiar with the theories upon which the practice of the different industries rests. How this works out may be illustrated by the record of our men. A request came to us last year to furnish three men to take charge of large paving contracts which involved technical control over the mixture applied as a wearing surface. None of these men had ever been taught how to make asphalt analyses or how to mix concrete. But they knew the fundamental methods of chemical analysis and a day or two sufficed to make them familiar with this special method of analysis. So, too, they had been taught to recognize truth and to read specifications as they appeared, and to construct as therein demanded. The result has given such satisfaction that the company has now requested us to furnish nine men for the coming season. This exactly illustrates the point I am raising. Your problems of plasticity, shrinkage, drying, fusion, etc., are new in form to our chemical engineer, but in substance he recognizes in them the same technical matter which he before had met here and there in his technical course. Just as he previously arrayed his material to solve the technical problem, so now he proceeds to employ with the aid of his working tools the practical side, the same means to solve the problems.

It is to be regretted that the chemical engineering profession is so young that we cannot well point to the men at the top of the various industries and ask you to behold what has been wrought. It is likewise unfortunate, perhaps, that in this discussion we cannot say, decisively, that the chemical engineer has been the ideal technical man for the clay industry. In frankness it must be said that the one chemical engineer enrolled as an apprentice in Mr. Farnham's plant was one of the dozen that deserted for one or the other reasons cited. On the other hand, in response to emergency calls from the clay industry, our men have responded and have in every case taken a most satisfactory hold of the problem submitted to them. These problems have dealt with dryer defects, terra cotta glazes and composition cements, clay washing, etc., the very mention of which indicates respectability, so far as the problems are concerned.

In conclusion, it is the belief of the writer that the best service to the industries, including the clayworking industry, will be rendered by the men who are technically trained in fundamentals and who are practically trained in details. This conclusion, therefore, resolves itself into an appeal for support on the part of the industries in need of men to direct processes, to turn to the graduates of our chemical engineering schools for assistance. It also includes the hope that the clayworking industry may recognize in the chemical engineer a man competent to deal with the processes involved in this industry under the limitations above described.

VICE-PRESIDENT EBEN RODGERS: I think we owe Prof. Benson an especial debt of gratitude for coming so far to add this valuable contribution to our literature, and as you gentlemen in this line of work are all very anxious to know just the kind of men we expect them to turn out, and the kind of training we want them to have, I think you will be glad to hear some discussion here along that line, bringing out the points that the men should be drilled in especially for this work.

If there is anyone that has anything to say, or if there is any discussion on this point, we should be glad to hear, but if there is no discussion on this point, we will pass to the next number.

SECRETARY RANDALL: The next paper—No. 9, is "Fire Insurance for Brickmakers," by Walter T. Campbell, of St. Louis, Mo.

Mr. Campbell is in the city and expected to deliver this paper, but has been called hence. He reads a similar paper this afternoon at the Face Brick Association convention, I believe, and so I will summarize his paper. I have his paper here, but I will not read it, I will summarize it.

I think the firm is going to do the brickmakers good, not do them good, but they are going to do them a great deal of good if they are successful, and I think they will be, in establishing an insurance bureau for the benefit of clay workers. They will insure clay plants, the bureau

will give to the clay workers and the policy holders, the same positive reliable insurance that you can receive from any of the old line companies, the benefit to be derived is in the education of the brickmakers up to a better line of structure, a better character of brick, making his plant a better risk; and instead of charging him an excessive premium to cover overhead cost, he is going to make the insurance at cost, plus a small per cent for expenses.

Cites Case of Lumbermen as Illustration.

Some twenty years ago in New York some of the merchants got together for this purpose and afterwards in New England, and more lately the lumbermen of the west.

Now, if the lumbermen can carry their plants by this kind of insurance, and accumulate vast sums of money, there is no reason in the world why the clay plants could not do the same, and there is no reason why the clay plants could not be made more fireproof.

I believe your Mr. Stewart was one of the first to put this bureau into practice, though not under the same name, but it has been practiced by some very large concerns, where the insurance, if they carried insurance, would amount to a large sum of money per annum. For instance, the Hydraulic Pressed Brick Company of this city, operating 12 or 15 plants, have, for 10 or 15 years, carried their own insurance—that is what it is called, carrying their own insurance; and that is all there is to Inter-Insurance, as we propose it. We propose to give to the clay workers of the country what the hydraulic companies have. The hydraulic companies are taking a sum of money equal to the premiums which they would have to pay to the old line companies for carrying their insurance, can go out and build their plants and construct them in a manner to minimize the fire risk, and it is seldom that we hear of a hydraulic plant burning; and the result is that they save a vast sum of money, which they have deposited, a sum of money amounting to many thousands of dollars.

We propose to give to the clay workers of this country just that kind of insurance by operating this Inter-Insurance Bureau.

The experience in other lines indicate that the actual cost of carrying insurance is only from 25 to 35 per cent of the actual premiums paid, and the general experience is also that the additional sums paid goes to dividends to stockholders, and to their overhead expenses, which are not incurred at all in this form of insurance we are offering.

The premium paid the first year on all business will be approximately the same as you are paying today to the old line companies; but there will be some saving in that connection, say 10 to 20 per cent saving the first year, but after that, a sum having accumulated and the risk being provided for by a surplus fund, the premium charged will only be the actual aggregate of loss sustained, with a minimum charge for expense, and the result will be that there is going to be a saving to the policy holders, the members of this Bureau, of anywhere from 40 to 60 per cent of the premiums you are now paying to the old line companies.

Throw Out That Pug Mill

It has served its usefulness. You need a larger one. Sell the old one by inserting an ad in the Classified pages, and buy a larger mill.

I have been led to take up this work from the fact that for years past I frequently got letters from brick men scattered all over the country saying: "Please give me, if you can, the name of some insurance agent or broker who will carry my fire risk; I cannot get the insurance through our local agents." Those letters have come to me for years past continuously, and I hunt around and find some general agent that operates in that territory to see if I cannot put him in connection with the person desiring to place the insurance.

The brick plants have been classified as hazardous risks generally, and possibly this is because you are using fires to such an extent in your kilns and driers, and possibly that justifies the insurance companies in classifying you as extra hazardous. But there is no excuse for that, if you will construct your plants properly—and this insurance bureau is going to try to get you to construct your plants properly—and for this reason, that the bureau is not going to write a risk on a hazardous plant; they will not write a risk on a plant that is not properly constructed. They figure that ultimately this will save many many thousands of dollars to the clay workers by this kind of insurance.

Plan Cuts Down Cost of Insurance.

Among the lumbermen there are three insurance companies covering lumber plants ranging from Texas north; and these three companies have accumulated, in the past ten years, something over two millions of dollars surplus, at the same time cutting premiums down to less than 60 per cent on the average, or at least less than 60 per cent of what they had previously been charging, and what is today being charged by the old line companies. The clay workers can do exactly the same thing. The success, of course, depends in part upon the support given to this bureau by the clay workers.

I am confident, when you know what this bureau means to do, and will do, and that it is perfectly reliable in the insurance it gives, you will come to its support, and that we will make a success of the venture.

Mr. Campbell is here, and is making my room his headquarters, and I would like those who are interested to see him personally, and he can give you the details which, for lack of time now, I cannot give you. I do not like to go further into the paper. It will be published, of course, and you will get it in full in that way. But this is a matter that means the saving of a very considerable sum of money to every one of you who are carrying fire insurance. That is all I have to say. The paper will be considered, read, and published.

A MEMBER: Mr. Randall, I would like to ask this one question: How do you intend to start that proposition? I have heard more or less about it, but ordinarily you have to have some nucleus to start those things. All of our policies do not mature on the same date, and in some way those things have to be underwritten so that you can take care of the start.

SECRETARY RANDALL: I am very glad to answer that question. We have provided for all that. A manufacturer, who is well known in St. Louis, is carrying large lines, and he has already placed insurance with us. Another concern is placing its risks with us. Mr. Head, of this concern, went to London a year ago and made an arrangement with Lloyds of London, to not only carry their surplus insurance, but to insure our own company. That is a kind of a family secret, but I don't mind telling you that the company itself is insured. I think we are just as safe as any old line company, I don't care how many millions of assets it has. The Lloyds of London

are the oldest insurance concern in the world. They carry more insurance of more diverse kinds than any other company. They will insure anything. If you care to know what extremes to which they will go, I will tell you that they will insure against bad weather. At Indianapolis we have the greatest race course in the world, with a track a mile and a half, and 40 to 60 feet wide, paved with brick, an automobile race course.

Tells How Lloyds Insure Freak Risks.

Two years ago the gentleman who built that track and who put about a million dollars into it found that the prospects were most excellent for a splendid week. You know they only have just one week of automobile races each year, and it is a pretty big investment to take a profit out of in only one or two days' time, so the promoter of that project, Mr. Fisher, of whom I spoke the other day, came face to face with the fact that if they had good weather they would net a very handsome return, but if they had bad weather they might sustain a very heavy loss. So he put a policy upon that with the Lloyds of London, insuring against bad weather. If it had been bad weather he would have cleaned up \$50,000 from that insurance; but we did have good weather, so he paid his premium and made his money through the gate receipts.

While I refer to Lloyds in that way, they are not gamblers. They are business men who go into these things just as carefully as any insurance man figures his premiums on any ratio. Lloyds is the firm that carried five million dollars on the Titanic, and they paid it within two weeks after that vessel went down.

Now, our company is re-insured, we are guaranteed; Lloyds of London are back of us. We are trying to give you good insurance. I think my intimate friends know that I would not go into anything that is not very certain. I am not going to deal in futures. The Lloyds of London are behind us.

PRESIDENT ROGERS: I had an occasion a short time ago to ask one of our lumbermen, a man who was insured in the same kind of insurance, and who had had a fire in his lumber yard in Rochester, and he said the settlement was made very satisfactorily; and I think you will find it will be just as satisfactorily made in this organization.



View of the Main Aisle at the Coliseum Showing Mystic Pool in the Center.

W. P. ALSIP: I would like to ask, Mr. Randall, whether you will extend the insurance to Canada?

SECRETARY RANDALL: If you will give us satisfactory evidence of the construction of your plant we will. But take that up with Mr. Campbell this afternoon, if you will. You will find him at my headquarters. We will carry the insurance. It is simply a question of the character of your risk and the reliability of your concern.

This, I believe, completes our program for today, gentlemen. I want to say again before closing that those who have not secured their banquet tickets, I wish would do so immediately after adjournment.

PRESIDENT ROGERS: We will now adjourn until tomorrow morning at 9:30 o'clock.

THURSDAY'S SESSION, MARCH 5.

The convention was called to order by President W. H. H. Rogers at 9:30 a. m.

PRESIDENT ROGERS: The Secretary will announce the first number on the program.

SECRETARY RANDALL: The first on the program is the first number on page 13 of the program, No. 10: "Some peculiarities of Face Brick Manufacture," the general discussion to be led by Douglas Stevens, of Cayuga, Indiana. Mr. Stevens, I believe is here. (Applause.)

I want to say just a word; we have on our Executive Committee a gentleman who has been accustomed to these kind of meetings, Mr. Deckman, and he says that the mistake we make is that we do not begin our sessions promptly on time regardless whether anyone is present or not. It is rather an unenviable situation to ask a member to prepare a paper, and he puts time and thought on it and then ask him to read it to empty benches. Of course there is another point to that, and that is that the great audience that his paper comes to are the readers of the report. He may present his paper to a few individuals here, but there are thousands whom he reaches ultimately. But just the same the members should be present here. Mr. Deckman says that if we adopt that rule they will be here when the time comes; but I do not think he understands the temper of our people. Now, in a meeting like the meeting of the Paving Brick Association where there are only twenty-five or thirty members, where they have common interests at stake that rule might work; but if we had called our meeting at 9:30 o'clock this morning, we would not have had three people in this room. Now, we have a better audience. For myself I would rather talk to twenty-five people who wanted to hear what I have got to say than to talk to a much larger number who were not interested. I do not see either Mr. Deckman himself here, who made those remarks, nor Mr. E. B. Rodgers, who seconded his remarks this morning. We will now hear Mr. Stevens.

Tells of Troubles in Face Brick Manufacture.

DOUGLAS STEVENS: Mr. President and ladies and gentlemen of the convention:

There is one feature in the manufacture of face brick which makes it more attractive than many other kinds of clay products, and that is the great importance of quality. Of course, every kind of clayware requires certain rugged characteristics of quality, such as strength, hardness, etc., but face brick must possess such excellence of color and texture that these considerations greatly effect the methods of manufacture.

These requirements have changed greatly in the last few years. Formerly architects and builders wanted brick with a perfectly smooth face and absolute uniformity of color, which were usually laid up with a very small mortar joint of the same color as the brick, so as to produce a wall of one flat shade, without any requirements as to imperviousness whatever. Under these conditions, brick made of clay by the dry press or soft mud processes occupied almost entirely the face brick field.

With the rise of the so-called "mission" style of architecture, however, the pendulum of popular demand has swung to the

other extreme. Instead of the perfectly smooth wall of one flat color formerly required, the wall must now possess a variation in shade which will give it "life." To produce this, brick of every conceivable shade are in demand and with all varieties of rough or "matt" faces. These are generally laid up with large mortar joints of a color in direct contrast to that of the brick. To meet these new conditions, clay has given way to shale and fire clay, and the stiff mud process is now used almost exclusively.

Quality Places Small Plant on Par With Big One.

The importance of quality rather than quantity in face brick gives the small yard practically equal chance with the large one; in fact, large concerns engaged in the manufacture of this class of products generally arrange their yards in a number of small units, rather than as one large plant such as would be most economical in making common brick or pavers.

Many of us are obliged to operate plants with the location of which we have nothing to do. These can appreciate, probably best of all, the importance of a good location. Ample transportation facilities for fuel and for finished product are, of course, pre-requisites, but a large supply of raw material is just as important.

The two main classes of material each possess advantages. Fire clay can generally be mined at moderate expense and often is found with coal in sufficient quantity for all fuel needs. But it possesses the disadvantage that artificial coloring must generally be resorted to, either by mixing in surface clays or by adding chemicals, such as manganese, etc., either into the body of the material or as a glaze or veneer to the face.

On the other hand most shales will produce quite a range of colors without any artificial aid. But the shales must generally be worked in open pit and usually are found with a considerable overburden of clay and rock or gravel. In the case of common brick this does not present a very great obstacle, since the overburden can often be mixed with the shale and the whole used successfully. With face brick, however, such a proceeding will bring grave consequences in the form of irregular shrinkage in drying and burning. To overcome this, it is necessary to install very expensive equipment for mixing the material, and often this will fail to produce face brick of uniform quality.

Therefore, in locating a plant for making shale face brick, to secure a good bed of shale with overburden small enough to be easily removed and so use only the shale becomes a very important consideration. The best method of removing the overburden will vary, of course, with its character, but for clay or gravel hydraulic power is generally the best. A steam shovel is often recommended, but where the size of the plant prohibits such an investment a belt conveyor will give good results, especially in removing rock.

Whatever the material to be used, the layout of the plant with respect to this material is of the utmost importance. It should be located as near the center of the bed of material as possible, and not at one corner, as is often done. A little longer railroad siding will pay much better than a long haul from the shale pit to the crushers. A cable hoist is usually the most efficient and the material should be raised to such height that most of the subsequent handling can be done by gravity. The layout of the plant should provide for handling all the material from raw to finished product in one direction only.

The methods of grinding the material are similar to those for other classes of clay products, but it is absolutely essential that the ground material as delivered to the pug mill be perfectly uniform. Where this is not true of the material used as it is found in the bank, it must be secured by conveyors, worm screws, etc., all of which introduce countless complications.

Troubles in the machine room are similar to those in all classes of clay products, and can always be removed by good equipment, but surprising results can be secured with old and poor machinery by careful handling and taking the "stitch in time" which saves ninety-nine later on, and a costly shut-down.

The drying of face brick presents problems peculiarly its own, since the preservation of the texture and color of the face is so important. Waste heat dryers, while admirably adapted to the drying of paving brick and common brick, can therefore be used for face brick only with the greatest care to prevent the admission of gases which would affect the color and appearance of the faces.

The steam dryer removes this difficulty entirely, and while not so economical in fuel is much safer and more flexible. By utilizing the exhaust steam while the plant is running, the fuel cost is considerably reduced. The preservation of the faces during the drying process requires more careful handling and more elaborate equipment than for other kinds of brick.

The burning of face brick now requires a kiln that will produce very considerable vitrification of all the ware without, of course, over-vitrifying any. It is also necessary that a considerable variation in shade be secured in various parts of the kilns. For these reasons the large rectangular kilns once so popular for producing face brick of uniform shade have now given way to the small round down-draft kilns. For the

INTERIOR VIEWS OF \$2000 PRIZE BRICK HOUSE AT CLAY SHOW



same reasons continuous kilns have not as yet been very generally adapted to the new kinds of face brick.

The successful marketing of this class of product requires that the brick be selected or sorted into certain limitations in the variation of shades of the brick. These limitations vary with different markets and often with individual customers. Of course, the number of the classifications should be kept as few as possible, for in these requirements lie many of the difficulties of the face brick business. This sorting is best done as the ware is drawn from the kilns.

This separation of the product into several shade classifications prevents the loading immediately of all the brick for shipment, under ordinary trade conditions, and necessitates the storage of many of them on the yard. This requires good sheds and especially good facilities for transporting the brick from kilns to sheds and from sheds to cars.

While the manufacture of face brick involves many difficulties which are not found in producing some other classes of clay ware, still it possesses many attractions, not the least of which is the feeling that our product is being used to beautify and make permanent the homes and buildings of our country.

Applause.

PRESIDENT ROGERS: Is there anyone wishing to discuss this paper?

SECRETARY RANDALL: Just a second, Mr. Chairman. Mr. Penfield tells me that there are a few gentlemen going down to the Chicago yards. If there are any gentlemen present who want to make such a trip, there is an opportunity now to go if they want to.

R. C. PENFIELD: It is just a question; there is going to be a party going down to Yards 30 of the Chicago Brick Company, to see a system of burning by forced drafts, burning coal. We have had to replace oil, and they are struggling with the problem of getting a substitute for oil.

There is a train going down at 12:20. If any of you want to go along, go down to the train and we would be pleased to have you go down. You can get back after 5 o'clock; and it won't cost you a cent if you want to go.

SECRETARY RANDALL: We have had a very interesting paper by Mr. Stevens, and I judge that some of you may want to discuss it in details, some of the things that Mr. Stevens has been talking about. He is here now and you had better fire your questions at him if you want to know anything further.

Discusses Value of Co-Operation.

PRESIDENT ROGERS: If there is no one wishing to discuss this paper, the Secretary will read the next number.

SECRETARY RANDALL: The next is, "Competition and Co-operation," by M. E. Gregory, of Corning, New York. (Applause.)

Mr. Gregory's paper will appear in a later number of this journal.

PRESIDENT ROGERS: We are very much obliged to Mr. Gregory for this splendid paper. Is there any one wishing to discuss it?

ANTHONY ITTNER: I don't care to discuss the paper, Mr. President, but I take extreme pleasure in saying that I approve of the spirit running all through this paper.

In assembling here we were treated by a lecture on ethics and morals by the gentleman who was acting for the Mayor, and who received us in this city. I have been a member of National bodies for some thirty odd years, and this is the first time in my experience, in attending these annual meetings that the welcoming speech was a lecture.

But this paper of Mr. Gregory's: If the industries and the business of this country, from the cradle to the grave, could be conducted by the methods and according to the

principles set forth in Mr. Gregory's paper, to which we have just listened, I think we would have the millennium; and that is what we all seem to be working for; although some of us that are working for it are defeating the very object of their work by their manner and their method.

I wanted to say this much, while I do not desire to discuss the paper, I do wish to say that I endorse it from "A" to "Z", from first to last; I would not change it by so much as dotting an "i."

M. E. GREGORY: I thank you.

J. FRED SMITH: I will say that we established a price some time ago for brick delivered at the job of \$7 a thousand, and we have kept it there for seven years. We make about 60 per cent of the brick used in our place; and if the other fellow wants to know where they can get a good brick, they can come to us. We make the quality and we get the price.

ANTHONY ITTNER: That is an honest price, isn't it, Mr. Smith?

J. FRED SMITH: It is; yes, sir.

Tells of a One-Horse Competitor.

A. E. DAVIS: In the city where we make brick, we put a whole lot of money into our plant and we found, after running a couple of years, that we were meeting with the wickedest kind of competition. An old man with two boys and an old lame horse was going out and making a kiln of two thousand or three thousand of brick, and selling them on the market for just what he could get. He figured out that as we were getting \$7.50 for our common brick, if he could get \$5, he would make some money. We were selling our face brick, but our common brick was piling up in the yard. We saw ruin if we had to keep on in this way, so we established this rule: when a man came to us and said he wanted to buy face brick, we asked him how many common brick he wanted, and if he did not want any common brick, we told him we did not care for his business, and so we killed off the old fellow with the lame horse. Thank you.

SECRETARY RANDALL: Mr. Chairman, there is no question at all but what the chief argument of Mr. Eddy, in his book, is correct, at least from a humanitarian point of view. There are many shifts and changes coming to us in our commercial life, and the doctrines which he is preaching need and deserve very considerable attention by those who want to give conscientious thought to it.

Mr. Eddy's book is entitled, "The New Competition." It will pay every man laboring with these problems to get and read a copy of that book. I believe you will be very greatly benefited. He is a very forceful writer; and I had hoped to have had him with us in this convention, but he had an appointment in New York City yesterday and today which he could not break, otherwise he would have been with us.

ANTHONY ITTNER: That is along the lines of Mr. Gregory's paper.

SECRETARY RANDALL: Mr. Gregory quotes freely from the book.

ANTHONY ITTNER: Then, I want that book.

SECRETARY RANDALL: I have read it, and I think it is a very able presentation of this labor question. I do not want to say this to advertise the book, but there is another problem in my mind, and that is that one of the difficulties the brick maker has got to contend with, especially in the rural districts, is a lack of brick masons; and if there is anything we can do to increase the number of brick masons, and give us better facilities, and check the unreasonable demands of the brick layers' union, it will help the entire fraternity.

I heard that there is a change coming over the officials of the labor unions, especially of the brick layers' union, a friendlier spirit, and if that is true we certainly ought to encourage them to see the light as we see it.

ANTHONY ITTNER: Let us know about that spirit.

Bricklayers Show Desire to Co-operate.

SECRETARY RANDALL: That is what I am coming to. I understand that one of the chief officials of the bricklayers' union has tendered his assistance. I think they did help us at the Clay Show. He expressed a wish that we might have a better understanding between the manufacturer and the bricklayer; and when the matter was brought to my attention, he said that he would be willing to meet here with us and speak to us if we would care to hear him; and we said that we would be glad to hear him, and we said we would be glad to hear any man coming in a proper spirit, and I think we will, and if he is here this morning I think it is up to us to hear what the bricklayers are willing to do, in order that we may have a better system, a system which will lift this ban on apprentices. He insists that there is not any intention to restrict the apprenticeship.

We all know how Mr. Ittner feels along this line, but I know that he is a reasonable man and will listen with patience if the speaker is reasonable, and we will all listen to him.

We are making more and more progress towards a better understanding between man and man, and I think it is up to us to listen to any man who speaks with authority for our bricklayers.

W. D. RICHARDSON: I would like to ask if our association is doing anything more for a bricklaying school than talk in our conventions; are we contributing anything to any bricklaying school?

SECRETARY RANDALL: Not at the present time. We tried our best to establish a permanent school at the Carnegie Institute at Indianapolis. The Secretary sent out a lot of letters, communicating with the members from time to time, but the financial support was not forthcoming and the school died unborn,—well, not exactly, it ran a couple of years and turned out twenty or thirty apprentices, but the financial management of the school was not what it should have been and it had trouble in one way and another along other lines, and I am sorry to say that the support given to the bricklayers' school was not what it should have been.

The financial support was confined to twenty or thirty men like Mr. Ittner and others who believed in this sort of work, but the great majority of the manufacturers paid no attention to it, nor to our letters, and we could not get the necessary financial support to carry on the school.

We asked, I think, for \$5 from each member of this association. Now, if the members of this association had each subscribed \$5 that would have equipped and maintained a school there that would have turned out twenty or thirty bricklaying apprentices every year, and it would have grown; but they would not even do that.

Wants Bricklayer Taught in Public Schools.

I think education along these lines, technical education, or industrial education, if you please, is very necessary; and I do not think that we can take a better course than to try to introduce these industrial lines into our public schools. Then every boy in the land can have the benefit of an industrial education, and if he wants to become a bricklayer he can learn the trade; and the advantage of having this in our public schools is that the course is open

to all of the boys in the country; it is not confined to any chosen locality where there is a technical school.

If there is a movement to establish these trades at any of your local centers, help that movement.

CHARLES J. DECKMAN: As a suggestion along the idea of the making of bricklayers, I would say that in Cleveland, our Builders' Exchange conducts a bureau of instruction; and it seems to me that if the members of this association, who are located in cities where they have builders' exchanges, which are composed of those who largely erect our buildings, that if they will manifest the interest that they ought to manifest, and create a bureau of instruction for schooling all those who desire to learn the laying of brick, something will be accomplished. It is an inexpensive proposition, and we are turning out a good many bricklayers down there with us.

ALBERT D. KLEIN: Along that line I think the public school systems all over the country are instituting technical classes. Cleveland has one of the best in the country, so I understand. We have one in Omaha. The high school gives a technical course and manual training course, and it seems to me that it is up to the brick-makers to interest themselves in this question of technical education and manual training. They should urge that in the larger cities a brick-laying course be added to the technical high school courses.

They teach carpentry, and they teach mechanical drawing, and things of that kind. Why then should not the youth of the land be instructed in bricklaying?

Tells of St. Louis School for Bricklayers.

ANTHONY ITTNER: Upon this subject of schools I wish to say one thing: That if there is any one in the United States who desires to learn the brick laying trade, there has been a school established in the city of St. Louis, by David Rankin, Jr., with a capital of \$3,000,000.

At that school they have two grand buildings, one of which was opened about two weeks ago, and upon that occasion I was present and went through the entire building. I went into the bricklaying department and saw the work that the boys were doing there, and very creditable work it was. I asked the instructor in that department how many boys they had, and I think his answer was "nine." I did not ask him the next proper question, of how many he could accommodate, but I think he could accommodate several hundred; that I take for granted. Now, why are there so few boys in that school?

CHARLES J. DECKMAN: They don't know anything about the school.

ANTHONY ITTNER: Don't you believe that, brother Deckman! Don't you believe that! They know about the school but there is something else. The boy who serves his apprenticeship there, and receives his certificate as a bricklayer, a finished, skilled workman, finds it is of no use to him; and that is why there are only nine boys there.

What I am about to say I wish to qualify by stating that it was true up to within sixty days ago. There was a boss bricklayer in my office just a few days ago, and I told him of the situation that existed in connection with that school, and other schools, for instance the New York school established by Col. Richard T. Carmody, in 1881. I guess if you should go there you would find only nine or ten boys in that school. And why? It is because it does them no good; it cuts no ice. As long as the unions have this pernicious rule limiting the apprenticeship, and furthermore, not recognizing that a boy can learn a trade in a trade school. Closed shop union-



The "Made in Iowa" Exhibit of the Iowa Association, Showing a Variety of Wares Made by the Iowa Clay Manufacturers.

ism in this country has never yet recognized the fact, that a body can learn a trade in a trade school, and learn it better there than he can learn it in many of the industries.

Mr. President, I do not like to see you standing up, because you seem to indicate by standing up that you want me to sit down. (Laughter.)

PRESIDENT ROGERS: No, sir, go on.

ANTHONY ITTNER: I think I am saying something that is of value.

(Cris of: "Go on; go on.")

ANTHONY ITTNER: I know how valuable our time is in these conventions, but I have been interested in what has been said by several of the gentlemen here, and I saw Mr. Gregory, when he was reading his paper, look at me—I suppose he knows my history. I raised this issue forty-six years ago, and I said then that I would be a free man in a free country. (Applause.)

I say the question of apprentices is a matter between the employer and the boy, and the boy's parents. Every child that has been born into this world, Mr. President, since the beginning of the Christian era is entitled to equal privileges with every other child. And I think any one or any combination of people that would prevent any person in any line of industry, or in any walk of life, from getting all of the advantages that the community, the state and the nation provide, is committing a crime.

Cites Case of Bricklayer.

Now, then, to go back to this trade school business. Up to within sixty days ago—what the arrangement is now I don't know, but I will find out before I am much older, I will tell you that—(Laughter)—but up to within sixty days ago a boy who had served his trade in the trade schools, and I am now speaking with special reference to the bricklaying line, a boy who had served his apprenticeship in a trade school in New York for two or three years, and who had received his certificate, or his papers, or his indentures, or whatever you call it, declaring him to be a finished, skilled workman, could not get a job in the city of New York, or the state of New York; and if, finally, through the influence of friends, he was given the opportunity of becoming an apprentice, he is not given one day's credit for the two or three years' time he has served in that school, in serving his apprenticeship. If the time for him to serve is three years, he has to serve

three years; if the time is four years, he has to serve four years, but he is not given one minute's credit for the time he served in that school. And the same thing is true in St. Louis, of the David Rankin school; that is, up to within sixty days ago.

Now, this boss bricklayer that I spoke of a moment ago was in my office within that time and told me that they had had a meeting of their bricklayers' union, and that they were about to enter into some other kind of an arrangement. Now, what that will amount to, I don't know; but from my knowledge of closed shop unionism, and from my experience with it for fifty years, I do not look forward to any new arrangement with much encouragement.

That is why, Mr. Deckman, there were only nine boys in the St. Louis school. They know, when they go there that it is of no use to them.

CHARLES J. DECKMAN: This school has not been established any great length of time, has it?

ANTHONY ITTNER: Yes, sir; it is on its third year now.

So that is the unfortunate condition of things; and when Brother Randall was talking here about having some



The Booth of the International Clay Products Bureau, which Represents a Novel Pergola.

one of these labor leaders come before us and talk. Of course, I would receive him and listen to him with respect and attention, for I would not like to introduce any discord to mar this occasion; but my opinion is, Brother Brickmakers, Fellow Citizens, that before any labor leader can come before a body like this, or any other body similarly constituted, they want to come in with a clean sheet; they want to come in with a clean sheet, I say; first abolish their restriction and limitation of apprentices; abolish their refusal to work with a man who does not belong to the union; and abolish many other arbitrary, unbrotherly, un-Christian and un-American rules that they are enforcing, and that they are enforcing rigidly today.

Raps Gompers as Head of Labor Trust.

I have said before, Mr. President, and I say it now, that it is a God's blessing to this country that that man Sam Gompers has not got ten million followers instead of two million; he had gone almost now to the point of telling the Congress of the United States and the President of the United States what to do; but if he had ten million followers instead of two million followers he would then go to the President, whoever he might be, Republican, Democratic, Populist, or Socialist and tell them what to do—

A MEMBER: Not a socialist.

ANTHONY ITTNER: He would go to them and say you do thus and so, and if he did not do it there would be a rough house.

Mr. President, this man Gompers has been before Congress six or seven years—I don't know whether you people are watching him or not, but I am—that is my business, and I don't know how much longer I have to live, but I have said it time and again, and I repeat it now, so that it will go into this record, that before I come to pass away and shuffle off this mortal coil, I hope to see the working men, the mechanics of the United States become Americanized.

This closed shop unionism does not belong to this country; it is not in our air; it is not homogeneous. It has come across the salt water and it became engrafted upon our system here about fifty years ago and we do not seem to be able to get rid of it.

I have often referred to the Brotherhood of Locomotive Engineers; that is an open shop concern. I do not believe there is a locomotive engineer in the United States today that the Brotherhood will accept that is outside of the organization, and Chief Stone says that they don't want any membership that is secured through force; they cannot depend upon them in times of stress. That is the way that all of the trade organizations might do. If there is any locomotive engineer in the United States who is not a member of a brotherhood, when he makes an application to become a member, there is a committee appointed to investigate his character, and if his character as a citizen is not proper he is not accepted. I am an Oddfellow, and when I made application to become a member of that order, a committee of three was appointed to see what kind of a fellow I was, and they passed upon me favorably, and I got in; and I have been in there fifty years, and if I live that much longer I will be there still, because I do not think they will expel me because I am trying to help my fellowmen.

Then I say as to this union, that until they abolish their arbitrary, un-American, un-Christian rules, there can be no co-operation with them; and there is no use of trying to co-operate with them. So far as I am concerned we don't want any interview or any consultation with closed

shop unionism as long as they have all those arbitrary rules and insist upon their enforcement. (Applause.)

Mayer Gives Solution to Price Regulation.

C. P. MAYER: I have listened to all of the gentlemen in discussing these papers, and I have heard such things as trade schools mentioned, and such things as the Sherman Anti-trust Law, and I have had a little experience in those things; and it was not amusing. I also heard several of the gentlemen talk about selling their brick for \$7. I would want to suggest to those that they had better be careful because some fine morning they might find that they are up before the Attorney General of the United States on a charge of being in restraint of trade under the Sherman Anti-trust Law. Now, I know what I am talking about because I happened to be one that was jerked up for that. (Laughter.)

That was in the lumber business; we were not put in jail, because there had been a precedent established with the Standard Oil Company and the American Tobacco Company that they would not put we fellows in jail, and, of course, we were not sentenced; but when you speak of the price of brick and speak of supporting trade schools by the brick makers, I think that pretty nearly borders on the verge of being ridiculous.

Now, in our community brickmakers had been up until recently making bricks which they used to handle four or five times by machinery, and that many times by hand, and they burned them with fires as hot as the lower regions and sold them for \$1.60 a ton. How in the world could they contribute to a fund to educate bricklayers? Why, that is a mere matter of supply and demand. They are living a life of usefulness, but they are as far along when they die as when they started, most of them, and you could not expect people in a line, or in a trade of that kind that made a commodity that sold at such ridiculous low prices to establish and maintain trade schools.

Now, we have in Pittsburgh the Carnegie Tech. I heard today about a school in St. Louis having but nine pupils. I will venture to say that the Carnegie Technical School has a great many more pupils than that.

ANTHONY ITTNER: What is that?

C. P. MAYER: I want to say that the Carnegie Technical School has more than nine pupils; they have a great many more than that.

ANTHONY ITTNER: They do not pretend to turn out a finished workman; that is merely a technical school.

C. P. MAYER: I was going to say this to the brick manufacturers, that the sooner the brick manufacturers get their heads together, Sherman Anti-trust Law or no Sherman Anti-trust Law, and stand for a price which will permit them to operate at a profit, the better.

We had recently in Pittsburgh an organization called the Western Pennsylvania Club. When they got together, of course, the first thing they talked about, which was the greatest in their minds, and they are right, was the question of prices. I had an invitation to attend, and when they began to talk about prices I told them that I had had my experience with the Sherman Anti-trust Law and that if they were going to talk prices I was going out of their meeting. Well, that did not take very well because they were bent on talking prices, but they finally ceased from talking prices.

Now, in order to test those brickmakers, and to see whether they were really sincere in having a better price, I sat down one morning and dictated a letter to the stenographer which I sent out to every member of



[Substantial Residence of S. M. McAtee at Jackson, Mo., Built of Dry Pressed Brick Made by the Kasten & Schmuke Brick Co. on a Fernholtz Press.

that club, and I told them that on a certain date and thereafter I would sell common brick—we make so few common brick that it is hardly worth talking about—but that I would sell common brick for \$6.50 at the factory, and where delivered to a distant point by wagon or car that we would add the freight or cost of teaming.

Plan Works Like Magic.

I told them that on close examination they might find that there was a pleasant scent with this letter, and I hoped that it would inoculate them so that they would sell brick after that for not less than \$6.50. Well, that was the first time in their history that they were really sincere, and every man is selling brick since that time for \$6.50. They were really sincere and they took up the cue and followed me; we inoculated them as I have said in the letter, I had told them that I hoped the scent would inoculate them so that they would not sell brick for less than \$6.50 thereafter.

And the fact is that if they do not show weakness in the near future, I will again inoculate them for a better price, and if we succeed in that, if we can inoculate the brickmen with the better price idea, or with the idea that they are not in business to waste part of their time trying to find out how to undermine their competitors, but rather how to help him along, and incidentally and indirectly help themselves, it would be better.

I want to say one word more before I get away from the Carnegie Technical School, and whatever good or bad comes from it, I want to say to you that possibly one reason why that school does not receive more encouragement is because of the method by which Carnegie made the money that maintains that school is an offense in the nostrils of every decent citizen in our community; that is why, I believe, the Carnegie School is not more successful. I do not believe that that is true of the schools you

have been talking about, but I know it is true in our community as to the Carnegie Technical School.

PRESIDENT ROGERS: Gentlemen, just one moment, while we want to give the broadest scope to the discussion of this question, it is one of our rules that a gentleman shall speak but once and not over five minutes on each question. I will try to recognize you all.

ANTHONY ITTNER: I have spoken two or three times and I beg to be excused.

MARION W. BLAIR: I think no one appreciates the value of the trade school more than myself; I am unfortunately a graduate of one of the technical schools which are scattered over the country, and while Mr. Ittner is a valuable and forceful member of the Manufacturers' Association of this country, I want to say that as a brick man that after four years of a technical school a graduate is entitled to enter into the shop of a Westinghouse electrical company, or of the General Electric Company, or of the Allis-Chalmers Company, and a dozen others that I could mention after a two years' apprenticeship, and at the end of this time if he makes good he is entitled to a seventy-five-dollar-a-month job. He starts at 15 cents an hour the first six months, and the second six months he may get 20 cents an hour, and so on if he deserves his advance, and at the end of two years he is offered \$75 a month. I want to state that a little charity ought to begin at home, and if the Manufacturers Association of this country would advance the wages of their apprentices, it would be one step towards better conditions and you would find that the technical schools are of some worth and are of some value in this country.

But, unfortunately, the time to go through a technical school is so long, and to go through the apprenticeship before a man gets even a living wage, much less enough

(Continued on Page 543.)

Monthly Tablet

Ancient Order of Chaldeans

Issued Under Authority of
The Supreme Temple
Chicago

Officers of the Supreme Temple

Supreme Venerable Nebo	W. D. GATES
Supreme Learned Fo	WM. SCHLAKE
Supreme Exalted Philosopher	F. W. LUCKE
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(NOTE: Address all communications to Iverson C. Wells, Supreme Keeper of Tablets, 445 Plymouth Court, Chicago)



ANNOUNCEMENT.

Following the adoption of 409 novices into the councils of Chicago Temple No. 1, Ancient Order of Chaldeans, which was formally instituted under the auspices of the Supreme Temple on the evening of March 5 during the visit to this city of the various associations of clayworkers, steps are to be taken towards perfecting the work of spreading the lessons of the three F's, and to that end a special session of the Supreme Council of Priests is called for Friday evening, April 4, in the club rooms of the Builders' Exchange, Chicago.

In fraternal greetings,
Iverson C. Wells, S. K. T.,
445 Plymouth Court,
Chicago.

Steps are to be taken within the next two weeks to organize additional temples of the Ancient Order of Chaldeans, the first temple of which was instituted during the recent conventions of clayworkers held in Chicago.

Several cities are fighting to get the distinction of organizing Temple No. 2, and the Supreme Temple has notified those that have signified an intention of applying for charters that the first application received will win the much-desired honor. The applications will be numbered in consecutive order and the new Temples organized accordingly.

Among those cities that are planning to form Temples are Dayton, Ohio; Des Moines, Ia.; Cleveland, Pittsburg, St. Louis, and probably Indianapolis. In some of these cities there are already the required twenty members and it will be necessary only for those who now hold membership in Chicago Temple No. 1 to apply for transfer cards.

It may be several weeks or even months before the additional temples can be instituted as the Supreme Temple is now having a special regalia designed and this will take time. This regalia will be in keeping with the historical costumes of Chaldea and will lend impressiveness to the work.

A meeting of the Supreme Council of Priests will be held in Chicago, April 4, and at this time plans for vigorous missionary work will be laid. It is proposed to have most of the important cities organized by the time the next convention of the N. B. M. A. is held, with the

idea of having the greatest powwow ever held by members of an industrial body.

TABLET TIT-BITS.

Membership cards will be mailed early in the month.

Application blanks for membership will be mailed to any Chaldean who requests the same.

A full list of the members of the first Temple of Chaldeans will be published in full in the next issue of the Tablet, which will appear May 1.

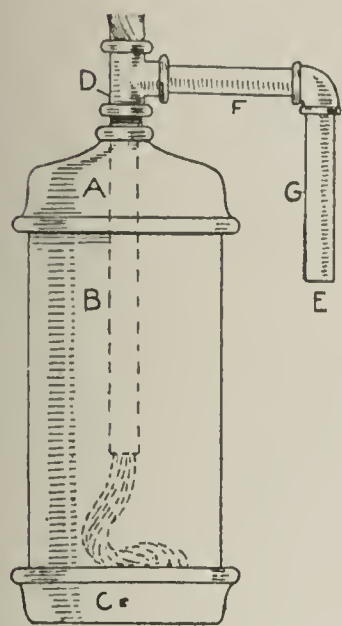
A statement of the financial condition of the Chaldeans will be published April 15.

The button emblem, which has been selected by the Supreme Temple, will be ready for distribution soon. Announcement of the same will be made by letter to every member, together with a facsimile of the button.

Chicago Temple will hold regular monthly meetings beginning with April 16. The location of the Temple has not been decided but will be announced later. It is expected that several applications for membership will be acted upon at that time.

The floor team of Chicago Temple No. 1, which had such short notice to prepare itself for the work of initiating the 409 applicants for adoption at the institution of the first Temple is working hard to perfect itself in the secret work and will have it letter perfect the next time it appears.

The 409 Chaldeans, who took their dusty trip over unpaved highways, got stuck in the mud and burned out of their wooden houses, will be glad to learn that the C. W. Raymond Co. is designing a brick machine and other special equipment for use in the Chaldean Temples, that the "Barbarian" who thirsts for further knowledge may be able to pave his roadway and thus make it smooth, and build his house of brick, while he is to be initiated into the mysteries of the Chaldeans. This equipment will be especially designed for the purpose and sold at a nominal price and will also be made to meet the approval of the ritual committee of the Supreme Temple. Any local temples can obtain these when made, from the C. W. Raymond Co.



A torch is frequently needed at the clay plant and the clever workman can readily make one of pipe and pipe fittings, as shown in the sketch, that will produce a strong light. The top part of the body A is a reducing coupling, $\frac{3}{8}$ by $1\frac{1}{2}$ inches, screwed on to a $1\frac{1}{2}$ -inch nipple, B, 6 inches long, which has a cap, C, for the bottom. The wick pipe is fitted with a tee, D, to which the pieces of pipe, F and G, are attached for a handle in carrying, or to hang the torch on a pipe or other projection. A certain amount of the air entering at E goes through the wick and helps

to produce a brighter light than the ordinary torch will make.

NEW USE FOR CLAY.

Germans Find Texas Clays Valuable for Refining Oils for Cooking Uses.

A very large and thick deposit of surface earth, found in Texas, and supposed to be "kaolin," until B. Grovermann & Co., of Bremen (Germany) made tests of it for refining all kinds of oils. They found it to have the greatest bleaching power known and leaves no bad taste or smell in cotton seed oils for table or cooking uses.

They telegraphed to the owner of the clay that they would come to Texas and put up a mill as soon as they found an American partner who would run this end of the business.

The deposit is close to the great kaolin and Fuller's earth deposits at West Point, Texas, which clays have been shipped to Germany for the last 19 months.

THE LAYING OF A TILE FLOOR.

Suggestions for Overcoming Difficulties—Looseness Must Be Guarded Against.

Makers of floor tiling are frequently asked, by customers, for directions for laying the tile, and according to Charles Hilf, in the American Architect, the main difficulty in laying a tile floor or border is encountered in doing the work so it does not sound loose or hollow when walking over it. He says there are only a few rules to be observed for best results. These he enumerates as follows: "The tile should be laid upon mortar; about three parts of very coarse sand and one part cement. This mixture should not be too wet, although of sufficient dampness for cement in solution to work up to the top when tile are tapped in place. The mortar bed should be evenly spread so that the four corners of the tile rest firmly, then the tile should be tapped in the center, otherwise there will not be an even bed underneath, causing it to sound hollow. Marble tile cannot be floated as encaustic or ceramic tile for edges rubbing against each other would chip, hence one tile is laid at a time.

"When tile are large, or border is used, after tile or border is tapped in place, it is advisable to take it up again, so all parts not filled with mortar can be filled with a mixture of pure cement the consistency of molasses, then again tapped in place. This will insure soundness and permanency. The bed of mortar should not be less than one inch nor more than two inches thick. The floor, before tile is laid, should be thoroughly swept and cleaned without sprinkling, then properly wet.

"After floor is laid if joints have not been 'buttered' with pure cement, the joints are to be filled with cement and water, called 'grout.' It is a mistake for grout to be mixed too thick; it should be as thin as possible, as otherwise the joints fill too rapidly instead of filling all voids underneath. This is a very important procedure. It may seem trivial, but particular attention should be given to seemingly trivial matters. They count much for good workmanship, appearance and permanency."

Useful Little Hints

In constructing the sole of a kiln use bricks laid flat. This gives only two-thirds of the joint area and reduces chances for leakage.

The temperature at which the water of constitution is driven off from the kaolin and clays is variously given by different investigators. Hygroscopic water escapes on heating to 110-125 degrees, or by long exposure of the trials to completely dry air.

Gypsum clay mixtures retain their plasticity to a higher temperature than usually believed. In a recent experiment a sample was still plastic after eight hours' burning at 790 degrees C.

A vitrifying refractory clay, if not thoroughly shrunk when the brick is fired, is liable to have a large contraction when afterwards heated.

Transmission is more efficient when the smaller pulley drives and when the tight side is at the bottom.

A simple test to tell the value of a lubricating oil is to hold a piece of window glass at a slight angle and pour on its upper edge a large drop of the oil to be tested. The drops will flow slowly down the slope and the one that travels the furthest will be the most fluid. Another test is to mix the oil with an equal volume of fuming nitric acid. Some oils become solid after a few hours of this treatment and these may be considered fairly pure mineral oils.

A clay which will stand a considerable increase in temperature after vitrification, without softening to the point of deformation and flow, will be, if other things are equal, the safest and easiest to burn.

Usually, when lifting up a cap from the feed hole in a continuous kiln, hot air and sometimes flame shoots out. The natural tendency of the heated gases is to ascend to the highest point in the chamber and is a pretty good indication that the top goods are getting their share of the fire.

However, if on raising a cap the flames immediately puff up the matter requires attention. The primary cause is weak draught and it is well to ascertain what causes the weakened draught.

Keep your plant in apple-pie order. An orderly plant means orderly men and orderly men mean increased efficiency and a better product.

Plenty of air over the fires will help drive off the water gases which generate in the body of the clay in the manufacture of sewer pipe. If the fires are closed air tight, the clay will start to vitrify on the edge.

Water properly treated with barium carbonate will be freed from all soluble sulphates and cannot give scumming trouble in the dryer.

Comparing a fine glazed sewer pipe with a blue center under pressure, with a pipe burned to a red body throughout you will find that the blue-centered pipe, which looks the stronger and harder, will not stand as much pressure as the other by 30 or 40 per cent.

Having your various machines so operated that any one may be thrown out of service by an individual clutch on the drive shafting will mean an annual saving in lost time by breakdowns and accidents by many hundred dollars.

Many manufacturers will shortly be overhauling their steam pipes and machinery with a view to increased work in the spring. Whilst this is being done it is wise to see that proper expansion joints are provided, says a writer in the Pottery Trade Journal. The amount of expansion depends on the temperature to which the pipes are heated, and on the metal of which they are made. Thus, copper expands half as much again as iron or steel. Find the temperature of the steam inside the pipes. This temperature, multiplied by the length of the pipe and divided by 100,000 will give the expansion if the pipe is made of copper; two-thirds of this result will give the expansion for iron or steel pipes with sufficient accuracy for all ordinary purposes. Sliding expansion joints are best, but failing these an angle bend or a copper expansion should be used.

Brick owes its color to the presence of iron in the clay from which it is formed. Usually 5 or 6 per cent. of oxide of iron (ferric oxide) will give a deep red color to brick, a higher percentage of carbonates of lime and of magnesium will modify the color.

Women Make Brick in Austria.

Many of the brick used in Prague, Austria, are yet made by hand, both women and men working in the yards. Practically all the buildings are constructed of brick and plastered on the outside. The brick are larger than those commonly used in the United States and not so well finished, not being used for facing the outside walls. The ordinary building brick sell at about \$8 per thousand. Many new buildings are being erected, which makes the brick business one of the best in that city.

GET INFORMATION HERE.

About the problems in manufacture and selling that bother you, but the place to sell or buy second hand machinery is in the classified ad pages.

Questions and Answers

56. *Kansas:—What is kaolin, its composition and what are its uses? I understand that there is quite a demand for it for use in the manufacture of china ware.*

The term kaolin is usually applied to white-burning clays. The deposits arise from the decomposition of feldspar veins. Kaolin possesses very little plasticity, although there are some deposits of white clay in the South which are erroneously called kaolin and which are highly plastic. Kaolin of good quality is pure white when washed and dried, but is gray in color when wet. Kaolins, as a rule, have to be washed to separate the particles of mineral matters which carry iron oxide. The washing also clears the clay from coarse grains of quartz, mica and other minerals, troughs usually being used. Kaolin is largely used for the manufacture of china ware and paper. The largest markets for china clay are at Trenton, N. J., and East Liverpool, Ohio. Kaolin is also used for the manufacture of floor tiles, making ultra-marine, as a filler for asbestos cloth, as a body for paints, and as a food adulterant.

Brick Paving Problem.

57. *Oklahoma:—I have observed frequent cases of brick-paved streets where whole sections were raised from the foundation. What causes this?*

Usually this is because of expansion. Evidently the pavement was not laid with any provisions for this emergency. The same trouble occurs with any paving material where the paving is brought into close contact with the curb. The No. 1 specifications of the National Paving Brick Manufacturers' Association, if used, will prevent this trouble. Secretary Will P. Blair, Engineers' Building, Cleveland, undoubtedly will send you a copy of the specifications upon application.

Interested in Local Advertising Plans.

58. *Iowa:—I am very much interested in the local advertising plan to create a demand for clay products which your journal is advocating so persistently. Where can I get a series of ads such as are suggested in your recent issues?*

There is a newly created department in "Brick and Clay Record" that offers our readers some valuable suggestions each issue. Reproductions of ads used by plants are given as well as new ones especially prepared for this journal. In addition to this there is a very valuable book issued by the Clay Products Advertising Co., 445 Plymouth Court, Chicago.

Brick Has a Grey Scum.

70.—*Ohio: I have trouble with a gray scum after my brick come from the dryer. Can you suggest an inexpensive remedy?*

Undoubtedly salts in your clay or in the water used for pugging causes your trouble. Use one pound of barium carbonate to each ton of clay. If this is not sufficient add a little more.

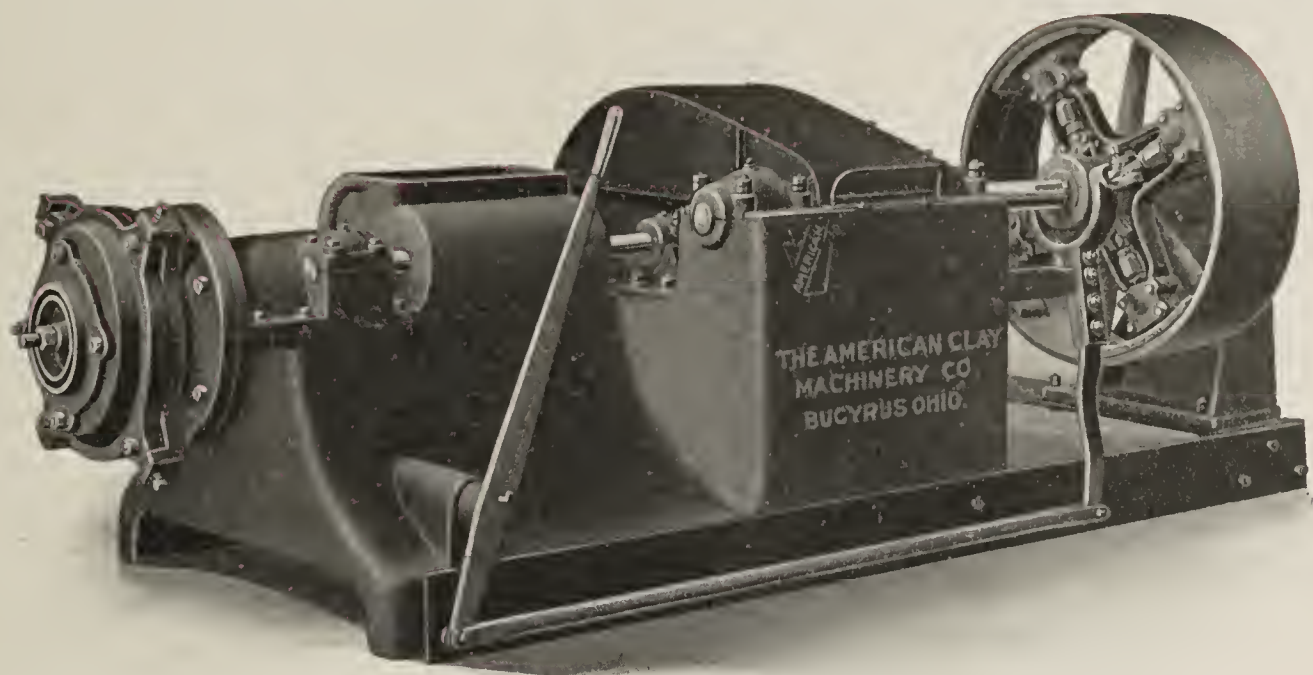
52. *Syracuse, N. Y.—Can you tell me of any machine which will make "Hot Top" brick—one that is placed on a steel ingot to prevent piping? I would like, also to procure a book which would give me some information on refractories.*

We refer the first question to our readers. "Refractories and Furnace Materials," by F. T. Havard, probably will supply the necessary information. It is only recently off the press and upon receipt of the price, \$4, the Book Department of "Brick and Clay Record" will forward a copy prepaid.

People will use the material most persistently pushed.
Are you pushing Clay Products?

THE No. 281 AUGER MACHINE

The "Baby Grand" of the Strong Family—Fourth of a Series



The No. 281 Auger Machine for Tile

The No. 281 Auger machine is built complete from new patterns and is intended for use in making the smaller and medium sizes of ware. It will give best results on drain tile up to and including 8 inches internal diameter, but will make 10 and 12 inch sizes from suitable material as well as side and end cut brick.

The gear frame and lower half of the clay cylinder is one casting carrying all the bearings except the one for hopper feeder and the outboard bearing. The bearings are of the reservoir ring oiling type, insuring constant lubrication.

The shafts are heavy and of steel; the gears are cast from new patterns, using our famous gear metal; they run in oil and are covered with a light steel, dust proof cover, excluding dust and retaining the oil in the gear

case. The hopper is provided with a very efficient feeder having reversible blades, split spiders, and may be removed and replaced through the hopper without disturbing any of the other parts.

The continuous screw is cast in sections with the wearing surfaces chilled entirely through; they take a high polish, are more efficient, and last longer than white iron or manganese steel.

The clay cylinder has removable liners over the expressing screw and can be cheaply renewed when worn out. The entire machine is mounted on heavy angle irons, making it self contained. This machine may be speeded to suit almost any capacity within reasonable bounds.

See That Dependable Machine



The American Clay Machinery Co.

Bucyrus, Ohio

Put in a punch for clay products and back up the punch.

Much the largest manufacturers of Clayworking Machinery in the world. And much the best.

Eastern Paving Men Organize

FORMALLY LAUNCH NEW ASSOCIATION TO
WORK WITH NATIONAL BODY AND ELECT

The Eastern Paving Brick Manufacturers' Association is now a reality. At a meeting of a number of manufacturers held in the Ft. Pitt Hotel, at Pittsburgh, Pa., the afternoon and evening of March 25, the organization was perfected. It will work in harmony with the National Paving Brick Manufacturers' Association, the headquarters of which are in Cleveland, and officials of that organization have given assurances that it will do all in its power to aid any movement, launched by the new Eastern association, to further the use of paving brick and paving block.

It was first believed that the session would be held at Harrisburg, Pa., but the majority of those interested were of the opinion that Pittsburgh would be the most central point to launch the organization.

Those manufacturers who were members and identified with the Pennsylvania Paving Brick Manufacturers' Association were, by resolution, shunted into membership into the Eastern association. Officers have been elected as follows:

President, Charles E. Foster, of the Foster Paving Brick Co., Bradford, Pa.; first vice-president, J. B. Hammond, of the Bolivar Brick Co., Bolivar, Pa.; second vice-president, W. M. Hodges, of the Tuna Valley Pressed Brick Co., Bradford, Pa.; secretary, C. E. Young, with the Mack Manufacturing Co., with offices in the Arrott Building, Pittsburgh, Pa.; treasurer, C. P. Mayer, of the Mayer Brick Co., Bridgeville, Pa.

The executive committee is composed of the officers and the officers with the following compose the board of directors: Mr. Blair, of the Bessemer Limestone Co., Youngstown, O.; John Porter, of the Globe Brick Co., Wellsville, O.; John Hall, of the Westerman Brick Co., of Baltimore, Md.; Mr. McComb, with the American Sewer Pipe Co., Akron, O.; Joseph Nicholson, of the Toronto Fire Brick Co., Steubenville, O.; M. E. Gregory, of the Terra Cotta Brick & Tile Co., Corning, N. Y.; Warren DeRosay, of the Corry Brick & Tile Co., Corry, Pa.

By the adoption of the constitution and by-laws, the association is pledged to promote the use of paving brick and paving block for highway improvement purposes because of its economic value.

H. H. MacDonald, assistant secretary of the National Paving Brick Association at Cleveland, made it plain to the new association that the National would lend its friendly offices in any way possible to aid any movement launched by the Eastern organization. He also exhibited a mammoth scrap book in which newspaper clippings were contained, showing the great amount of publicity work obtained in the newspapers through the National offices.

The most salient feature of the organization meeting was the adoption of a uniform contract for the sale of brick, and this form of contract will hereafter be used by all paving brick manufacturers when pavers are sold. It reads as follows:

Memorandum of Agreement, Made and entered into thisday of....., 19...., by and between.....
.....party of the first part, and.....
of.....party of the second part, WITNESSETH:
FIRST, The party of the first part agrees to furnish to.....
.....the party of the second part approximately
.....thousand.....for paving.....

Street in.....from.....to.....
f. o. b. cars at.....for the sum of.....
per thousand thereof, and guarantee that.....
block will lay one square yard of pavement.

SECOND. The party of the first part agrees that said block furnished shall substantially conform to and with the specifications on file in the office of the City Engineer or other authorities of.....State of.....
and on which bids were made for this contract at letting.....

THIRD. The party of the first part agrees to begin shipping said block to the party of the second part, on or about, and to continue same to average a rate of.....cars per day until the entire amount has been shipped, unless prevented by strikes, fire, accident, shortage in cars, or some other unavoidable cause.

FOURTH. The party of the second part agrees to receive, pay the freight as required, carefully handle and unload immediately, upon arrival, all brick and block shipped by the party of the first part, to report promptly car numbers, if any, that do not arrive in proper order, and in what respect, if any, that the brick or block therein do not correspond with the invoice; that the failure to make such report in writing together with proof of same within two days after receipt of car will be an acceptance of the quantity of brick or block as stated in the invoice thereof.

FIFTH. The party of the second part further agrees to use all reasonable care in unloading and handling, and that in all cases the brick or block shall be firmly piled and not dumped or pitched, and that no allowance shall be made for brick or block broken or for turning the same in the pavement, it being understood, however, that brick or block delivered under this agreement shall be subject to inspection by the duly appointed inspectors, and party of the second part further agrees, whenever possible, to use rejected block for batting or closures, and to stack up so as to permit of being counted all condemned and rejected block not so used, and also to store them for a time not to exceed sixty days; and said defective block or brick in excess to yardage guarantee may be charged back and credit given therefore by the party of the first part; also the credit for rejected block or brick shall not exceed the actual number returned to the party of the first part. It is also understood that said second party will make settlements on the basis of the entire quantity of brick or block shipped each month, and that any settlement for rejected block or brick is to be made at the final payment or after the work is completed.

SIXTH. Party of the second part agrees to pay party of the first part, or its order, on or before the 15th of each month for all block shipped the previous month. Party of the second part further agrees to pay interest on all over-due accounts at the rate of 6 per cent per annum until paid, after the month following shipment. Party of the second part further agrees to return all freight receipts promptly to the party of the first part for credit monthly, and further agrees to give good and sufficient bond or other security for payments as above stated, if required.

SEVENTH. The said party of the second part hereby assigns to the party of the first part, out of the money the said party of the second part is to receive for the improvement or paving of said blank streets, so much of said money as may be due or owing to said party of the first part, for block or brick so furnished as aforesaid, and agrees that the council or proper authority of said city of blank shall retain the same in its possession and deliver it to the party of the first part when it may become due.

EIGHTH. It is mutually agreed by both parties hereto that this contract contains their entire agreement and that no verbal understanding or agreement shall be of any force whatever.
IN TESTIMONY WHEREOF, said parties have hereunto set their hands the day and year first above written.

The above contract is to be used invariably by all members of the association and goes into effect at once.

WANT A SUPERINTENDENT FOR YOUR PLANT?

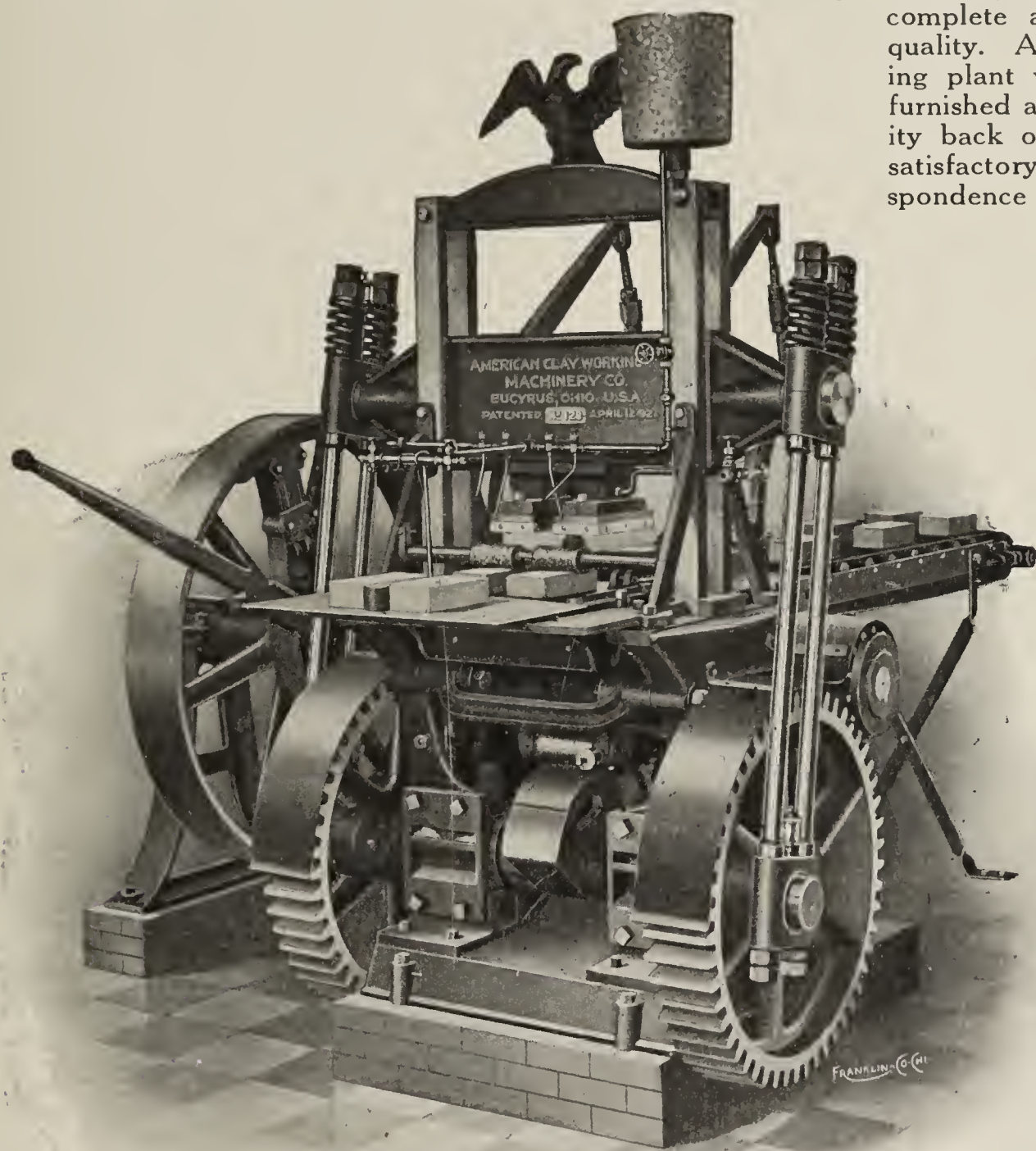
Insert an ad in the Classified Columns.
All good men read the classified ads in
"Brick and Clay Record."

If you can't recommend your own clay products, recommend some other fellows

GOOD ROADS, BETTER ROADS, BEST ROADS

The whole country from New York to 'Frisco and from Maine to Texas is alive with the good roads question. Good roads of yesterday are bad roads today and will be vile roads tomorrow. That's because they are not built of brick. The day of the Vitrified Brick is here. No road will compare with it. None will equal it. The manufacturer of brick can look best to the interests of paved roadways by being sure that the quality of his brick is such as will insure long and satisfactory service. Good pavers are the product of good material, good machinery, good kilns. No one company is so well able to insure quality of pavers through quality of equipment as is the American Clay Machinery Co. Our line is

complete and replete with quality. Any unit for a paving plant will be promptly furnished and with the quality back of it to guarantee satisfactory service. Correspondence solicited.



The American Clay Machinery Co.
Bucyrus, Ohio, U. S. A.

Clay can't be beat for permanency, economy, convenience and beauty. Tell others about it.

Much the largest manufacturers of Clayworking Machinery in the world. And much the best.

Adams Urges Publicity

BEING A CONTINUATION OF HIS ADDRESS
BEFORE THE FACE BRICK ASSOCIATION

J. M. Adams, the retiring president of the American Face Brick Association, marked the close of his administration with a stirring appeal to the delegates at the annual convention in Chicago a few weeks ago.

Mr. Adams' address was given in part in the March 15 issue of "Brick and Clay Record." The conclusion of his paper is given below. In his opening remarks Mr. Adams urged the face brickmakers to fight competition with its own weapon—publicity—and advocated an aggressive campaign in 1913. One of his chief criticisms of the manufacturer was that he failed to bring into use modern business methods, contenting himself with running his plant in "any old manner."

Taking up this phase of his subject Mr. Adams continued:

The attitude of the brick plant stockholder reminds me of an old gentleman who held stock in a concern of which he was proud. He boasted frequently about the big dividends they were going to pay. After the annual meeting of the stockholders he was very reticent; no more boasting. He evaded all inquiries as to the amount of the dividend, but finally when pressed for an answer he said, "Well, we didn't earn as big a dividend as I expected and I didn't expect we would."

Advocates Nation-Wide Co-Operation.

Every face brick manufacturer in the United States ought to be a member of this Association and pushing with all his might. He ought to be here today with his check book, ready and anxious to pay his share of the campaign expense. We might as well look the conditions squarely in the face. The time for sidestepping is passed. The lumber dealers are alert, and are watching every angle of their business. The steel men are safeguarding their interests, regardless of the cost. The cement men are spending many thousands of dollars in pushing to the front concrete as a building material.

The face brick manufacturers alone are inactive. It is high time that we arouse ourselves from our Rip Van Winkle sleep, before it is too late.

Listen: The only reason under heaven why our business has not been swept off of the face of the earth is the surpassing excellence of our product. Had brick not been the best building material yet discovered, it would have gone down before the onslaught of its enemies long ago.

"Rome sat on her seven hills and ruled the world." She had developed the greatest code of law and the most superb civilization in many respects that the world has yet seen. In her greatness she said: "Behold my political institutions, my wealth, my power. I am secure." That day began the decline of Rome. She finally fell before the Goths and Vandals from the North. We have said our product is the best, therefore our business is secure. Already we are falling behind in the race, even now the Goths and Vandals are thundering at our gates.

To defend ourselves we must have organization, equipment, money. The payment of \$50 or \$100 per year each will not suffice. We should follow the example of the National Paving Brick Association, which has accomplished so much. Until recently each member of the association paid into the treasury one cent per square yard of pavement sold, which would amount to 25c per thousand brick. They are now paying, I understand, 8½c per thousand.

The face brick manufacturers by paying into our treasury only five cents per thousand brick shipped, could raise a fund of \$36,000 per annum. A wise expenditure of this fund would pay rich return on the investment.

Ten times \$36,000 is given every year to dealers by the manufacturers in the way of concession in price. When an agent wires you that if you will grant him a concession in price of \$1.00 per thousand, he can secure



J. M. ADAMS,
Retiring President A. F. B. A.

an order for you, for 200,000 brick, wire back "No, you have our price list." If we would all adopt this policy, the practice would cease and better prices be secured, besides funds for organization purposes would come easily.

Opposing forces neutralize each other and the result is often nothing, but united forces mean strength, power, accomplishment.

Let there be no sulking in the tents; no satisfied inactivity because of present prosperity, no timidity because of present adversity. There are forces at work today that may very soon turn your prosperity into adversity or your adversity into total ruin.

In marshaling our forces, let there be no laggards, no deserters from our ranks.

Let us inscribe on our banner, "Brick the one building material, that is artistic, beautiful, century-tested, time-defying." Under this banner let us march on to victory. Shoulder to shoulder, elbow to elbow, one in thought; one in purpose; one in action.

"Distributing Agencies and Districting of Same," was one of the most valuable papers read. It was by John H. Black and follows:

Our President in finally assigning this subject, could easily have made a wiser selection, for the reason that my experience has been principally that of a sales agent or dealer. My experience from the manufacturing viewpoint has been entirely confined to a small plant, operating over a limited field, in a small way.

The object of distributing agencies is to produce the greatest possible sales of our commodity, in the best possible manner, that we may gain the highest average yard price and therefore Profit.

This is an age of Specialists. Men who have devoted much time and study to know the best manner in which to do certain things, to get the best results. There are such men engaged in the sale of front brick and outside of New York and Chicago. Selling of front brick is a job calling for a specialist.

Manufacturers, large and small, should be urged and encouraged to connect up with these men, who are devoting their brains and energies toward the sale of front brick, and to building up that end of our business,

Talk chestily of Clay Products, but have your product worthy of your talk.

The Kiln of Economy

On the first of February we mailed you a copy of The Haigh Kiln Catalogue. If you have not received it, please notify us and we will send you another copy. This Haigh Kiln Catalogue is probably the finest and most complete piece of Kiln literature ever issued in any country. But the Haigh Kiln is worthy of it and the results our Haigh Kiln will get for you are just as attractive as our Kiln Catalogue.

Our Haigh Kiln is making good wherever used and will improve your product and reduce your burning cost if you will give it an opportunity to help you.

Look the catalogue through. Read its every line of accomplishment and promise. Write us about your plant and what you are paying for burning your product. We will give you an estimate of what saving our Haigh Kiln would effect. If it's not enough of a saving to interest you you need not install the Haigh Kiln. We know we can save a lot of your fuel. Let us tell you how much.

We build every machine and appliance used in the manufacture of Clay Products. Write us.



The American Clay Machinery Co.

Bucyrus, Ohio

See the American Clay Magazine for further Announcements



Push Clay Products because Clay Products won't push themselves.

Much the largest manufacturers of Clayworking Machinery in the world. And much the best.

and to give to their profession, in the community in which they live, the dignity and standing it is entitled to have. The duties of these men begin with architect's design, include the factory, and end when their brick are laid in the wall.

They are called into conference by architects and engineers, who, admitting the value of their knowledge of the brick business, wish their aid in obtaining proper kinds and quality of brick to fit their designs and requirements.

They insist that their factories shall take proper care in sorting and loading their shipments, that the transportation companies shall deliver their shipments in good order; that the carting company shall not chip or break up their loads, and by methods, various, undertake to induce the contractor and his bricklayer foreman, to lay the brick, faces out and with care to keep them clean, that the job, when completed, will be a lasting monument, and thereby make other sales.

Finds Opportunities for Brick Agencies Few.

Now, then, there are few cities, if any, that alone present sufficient opportunity for exclusive brick agencies to maintain the necessary and highly efficient organization to carry on this end of the business, in the right manner.

Well-located quarters, with carefully designed display is necessary, the value of which is pretty well demonstrated at the Coliseum.

Help, competent to follow shipments from factory to destination, that there may be no unusual delay, thereby reducing the liability of damage in transit, and that the building may not be held up.

Competent, trained salesmen, who know how to present their wares, in their true aspect, and intelligently interest the prospect, that he may be induced to buy for his house or commercial building, the kind and quality of brick he should have and at a fair price. These men will be above submitting samples of first grade and shipping seconds. (We all know this is done entirely too frequently) and being competent and having the welfare of their business at heart, will not misrepresent.

Frequent trips to the factories are made, that the organization may be properly familiar with their products and facilities.

The manufacturers should make, also, frequent visits to their agencies, that they may know the requirements and that the merits of their wares are being properly and efficiently presented.

These agencies can be developed and maintained, if the territory naturally tributary to the large cities is added to and included in the agency.

This requires absolutely the abolishment of agencies in small towns or cities covering one or two or a few counties. We know that no man can afford to spend money to go to plants and large cities, preparing himself properly, and expect to make a decent living and hire enough help to keep his office open during his absence and have telephones, from the sales of the few front brick possible, in an insignificant territory.

Complains of the Supply Houses.

What is the result? Agencies are placed with general supply houses, who, no matter what they say, take on the line as a side line. Not for the purpose of developing the brick business, but as an aid to selling general supplies—cement, wall plaster, etc. Knowing little or nothing about face brick, they care little how small the profit is on a sale of brick so long as they get the cement or wall plaster order, at a fair price. One hundred thousand brick on a margin of fifty cents on a dollar is \$50 or \$100 and all profit in their estimation. The cement or wall plaster order covered the cost of the transaction and netted a profit also. Well, we all know better and so would they, if they kept their books carefully. These people have few ideas on the subject and with the sole desire

of taking the order, will offer the cheapest sample they can find, that looks fairly well, regardless of its fitness for the case, in either color or quality, and knowing absolutely nothing about the manner that factory will or can treat the order, will agree to or guarantee almost anything. They probably do not intend to misrepresent but in their ignorance and eagerness, will take a chance and make promises from their samples, that no factory can live up to.

Now then, who is to blame? Why the factory is, for establishing agencies all over the country and any old place, without investigation or knowledge of the condition existing or possible.

What is the answer? In establishing agencies, look the ground over and connect up with men who intelligently make their living and a profit besides, from the sale of front brick and are therefore trying to build up the business and not tear it down. Recognize the fact that an agent's commission must be from \$2 per M. upwards and not from \$2 per M. downwards and principally downwards, and insist that he sell at a good profit. Require your agent to visit your plant and know your capabilities and also your limitations and to come at least once a year. Insist on it and then help him to know his business and therefore yours and mine.

Let us feel some responsibility ourselves how our brick look when they are in the wall, and not forget the brick as soon as the car door is sealed up and thereafter think of the account only.

If our agency is in the hands of some one who understands the business and is building it up on its merits, our brick shipped on one order will help us sell another.

Let us require an agent to send with his order the name and address of the owner and architect, and then write Mr. Owner and thank him for this order, stating the color and quality called for and send a copy to the architect. If the agent is trying to "put over" something, we will soon hear from the owner. At the same time we could tell the owner that no matter how careful we are in shipping, his job will not look well unless our brick are properly and carefully laid up and in good mortar of the right color.

Makes a Practical Suggestion.

You will say, that in many districts, there are not sufficient brick specialists to take care of all factories which are entitled to a share of that business. In my judgment two or more plants with similar or nearly similar products can go together with the one agency and with the understanding that they will all get a fair proportion and a "square deal." The honest and decent agent will keep an exact monthly record of all his sales and shipments from each factory and can have no objection to a show down. We might better do this, than have our agencies in the hands of ignorant or unscrupulous dealers or agents, who are constantly complaining about the rotten low prices the other fellow is making, and trying to induce us to reduce our factory prices or ship them first and second quality mixtures to reduce the price, or else send them an extra good shipment of seconds.

In all probability this is the fellow that first made the rotten low prices. We may occasionally find it advisable to stay out of a certain territory until it develops more tonnage and in that case some one else would likely do the same thing in some other district. We might better stay out occasionally than undertake to go into a situation where conditions are fairly good and help disrupt them.

Prices are so easily cut down and so hard to advance.

I notice that fuel and labor costs continue to advance.

If this Association develops, it will undoubtedly be possible to keep a careful list of agents, recording their good qualities and also their deficiencies—merits and demerits. It would probably be a good idea to keep the same record of the manufacturers whether they are members or not. This would surely be an inducement to improve and maintain the standard of our product and also our business methods.

Gives a Tentative District Plan.

In the matter of districting, I presume New England, excluding Connecticut, would go with Boston. New York City would cover Connecticut, Eastern New York and Northern New Jersey. Philadelphia control Southern New Jersey, Eastern Pennsylvania and Delaware. Washington would cover Maryland and Virginia. Buffalo would control Central and Western New York, a small portion of Pennsylvania and that portion of Ontario

WANT A SITUATION?

There is the right place for the right sort of a man somewhere. The problem is to get the two together. Our Classified Ad pages bring both in touch with the other.

A Quality of Machinery Above All Others

Grinding Mills For Sand Lime Brick

For the manufacture of Sand Lime Brick, Wet and Dry Grinding Mills do much to improve the quality of the brick, and thus popularize this type of brick and extend its market.



Many features in the construction of our mills are the direct outgrowth of our long experience in grinding silica sands, crushed rock, and similar substances, and more particularly in mixing and grinding sand and lime in their preparation for the manufacture of sand lime brick. The use of these mills enable the manufacturer to combine the several operations of moistening, mixing and grinding, into one, thus greatly simplifying and improving the method of sand lime brick making. The mills possess the further advantage of so grinding the sand that it is given the sharp and gritty consistency which is essential in obtaining a perfect bond between the sand and lime, and this is necessary to secure a high grade product. The abrasive action of the mullers by virtue of which the sand is broken up into sharp angular particles instead of a fine and granular powder, explains the high efficiency of the machine.

More than thirty of these machines have already been installed in sand lime brick plants throughout the United States and have in each case proven more than satisfactory.
We build every machine and appliance required for the manufacture of Sand-Lime Brick.

The American Clay Machinery Co.
Willoughby, Ohio, U. S. A.



Much the largest manufacturers of Clayworking Machinery in the world. And much the best.

known as the Niagara Peninsula. Pittsburgh would dominate Western Pennsylvania, West Virginia and Eastern Ohio. Columbus, Central Ohio, Cleveland, Northern Ohio, Detroit, Michigan, etc. This is an important matter that could be carefully worked out in good shape by a competent committee.

"The Necessity for and Value of Cost Accounting as an Aid to Intelligent and Successful Management," was the subject of a paper read by Edward E. Gore. It follows in full:

In the brick industry, as in every other industry, the prime consideration, the real excuse for being in business is to be able to realize a profit upon the business transacted. This profit necessarily represents the difference between the cost of producing and selling the output and the amount received for it. That which determines the amount received for the product is the selling price. If the selling price be determined by any other means than by the addition to the known cost of production and sale, of a percentage intended to represent the profits desired, the transaction becomes one that is hazardous in the extreme. Prices which are made because other producers are making that particular price, or, generally speaking, prices which are made to meet competition, are almost invariably lower than are justified, when the cost of producing and selling the goods is considered.

The self-evident truth of the observations so far made will be conceded by every manufacturer, and these observations were not made with the idea that they revealed any new truths but for the purpose of more effectively calling attention to the fact that no industry can be sure of success which is in ignorance of the cost of the thing it sells. Wherever there is ignorance of the cost of the thing produced there is bound to be an unnatural and an unnecessary hazard in the transaction of the business, a hazard which has many times proved too great and resulted in the destruction of the business itself.

There are few successful industries which have not learned the necessity for a proper method of computing costs and have not provided themselves with the means of securing such information. The value of a satisfactory cost accounting system does not lie entirely in the direction of preventing the sale of goods at less than they should be sold for, but is likewise useful in fixing prices that are not unreasonably high, thus enabling the industry to enjoy a wider market and still receive a satisfactory profit.

Cites Profitable Case of a Manufacturer.

The writer has in mind the case of a certain industry which before the introduction of a proper system of cost accounting succeeded in earning only a little more than enough to meet the expenses of the business, during a period of twelve years of operation. After installing a cost system which informed the management of the cost of everything produced, in every process of manufacture, the profits of the first year were seven times greater than the total for all the preceding years in business, and have continued to increase subsequently, thus transforming what had been a most unsatisfactory enterprise into one that was full of profit and that now stands at the top in its line.

The interesting feature of this particular case is that fully as much if not more profit was realized through a reduction in price on certain lines of goods as from an increase in price on certain other lines of goods. The revelations of the cost accounting enabled the management to see that on certain lines which were manufactured the prices were unreasonably high, and the orders received in competition with other houses were comparatively few, while, on the other hand, there was revealed the fact that a great deal of business was solicited and struggled for upon which the profit, if any, was a negligible quantity.

Immediately upon coming into possession of this information, the management reduced its prices to a reasonable basis for the profitable lines of work, and very soon had its shop filled to its capacity with orders carrying a profit which was certain, and putting competitors who were less fully advised as to the cost of manufacture at a decided disadvantage. In the matter of the lines which it was found had been unprofitable, the solution was easy, since the house enjoying such a large share of profitable orders felt perfectly free to turn down or-

ders in lines which through competition had been reduced to a point where a profit was impossible and a loss quite probable.

It is true that in the brick manufacturing business there is comparatively little complication since the output is practically the same, so far as material, labor and other expense is concerned, and there are not produced a multitude of different articles all involving different processes, different amounts of labor and different kinds of materials, as is the case in many other industries. This condition very much simplifies the matter of ascertaining correctly the cost of the product.

The natural division of costs in brickmaking are: Mining and Conveying Clay, Machine and Mill Labor, Drying Labor and Expense, Kiln Labor and Fuel, Piling and Loading, with subdivisions of these general classifications to advise the management, through the medium of comparative statements compiled from the cost accounting records, as to whether normal conditions obtain in the character and amount of charges recorded.

Finds Conditions Favorable to System.

Another condition favorable to the adoption of a cost accounting scheme by brick manufacturers, is the fact that in proportion to the value of their product the number of employes is considerably less than would be necessary in almost any other line of industry. This means that in the matter of time-keeping no serious problem would be encountered.

In the matter of the cost of material no complicated calculations are necessary since the quantity of the material used is easily determinable by the daily production and the price of the same ought to be an arbitrary figure representing the amount creditable to a reserve for exhaustion of supply.

Probably the most difficult matter to handle in connection with the cost system for a brick plant would be an accurate account of the amount of fuel used, but this would not provoke any serious difficulty as it would not require a great deal of time to weigh the fuel as it is used.


A complete cost accounting system for a brickmaking plant should easily be operated by one clerk to whom should fall the duty of collecting proper time reports of the men employed, proper tickets showing the weights of fuel used and an account of the brick delivered from the cutting machine or press daily. In the matter of deductions for spoilage, an arbitrary percentage could be used, based upon the best information of the management, which should be tested as to its accuracy from time to time. A satisfactory cost system could be laid out which would give to the management, at least monthly, and weekly if desired, the exact results of operation for the period.

After the collection of all of the information with respect to material, labor, fuel and production, there should be provided a suitable blank for the recording of this information and the calculation of the effect of the day's operations upon the accounts kept and the entry to their proper places of the results so shown. The books upon which this information is recorded should be so laid out that a statement can be readily extracted at the end of any given period, which will disclose all of the information necessary for the management in the handling of the business. This statement should be in such form as to disclose the cost of all points where the same is of importance and which should be set up per thousand of brick produced, in such way as to afford a direct comparison with the preceding period and with the same period of the preceding year.

Finds It Impractical to be Specific.

It is impossible in a paper of this kind to be as specific as some may desire, for the reason that there may be details of manufacture connected with one plant which will be absent in the other, although in the brick business there is less likelihood of this condition than in almost any other line. This much, however, may be said, without fear of successful contradiction: First, that a brick plant to be run intelligently and with the fullest measure of success should be provided with a proper cost accounting system; second, that a cost accounting system should be laid out along simple lines without unnecessary complications, and yet be designed to show all of the essential details of the cost of manufacture; third, that such cost accounting system should be kept







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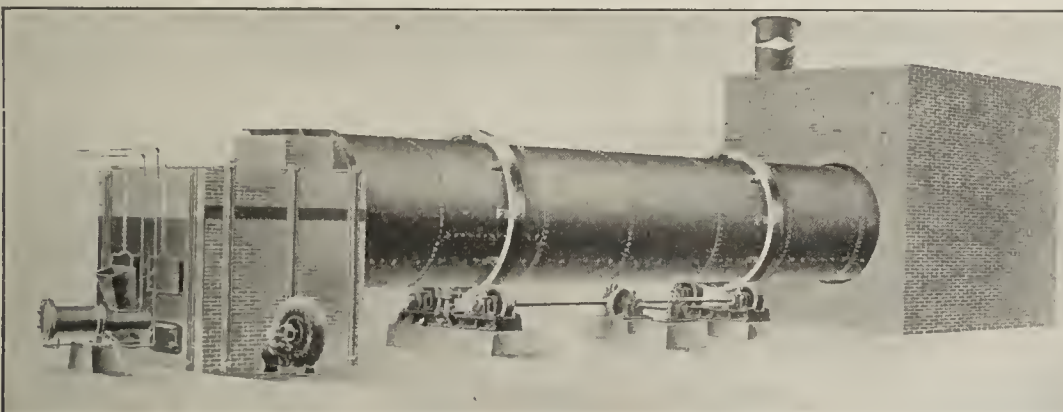
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Read Page 548 of this issue.
 It will interest you.

by an employee whose competency for such work is unquestioned, and who would not be permitted, under any circumstances, to fail to keep his work abreast with the operations of each day. There is no reason why the introduction of such a cost accounting system should involve an extraordinary expense, either in designing the same, or in the blanks to be used, or in carrying it on after installation.

It is not improper in this paper to call the attention of your association to the fact that a very considerable advantage might accrue to the various members of the organization by the adoption of a standard system of accounts. There are few lines of business in which it is more feasible to install a standard system of accounts than in brickmaking, and the result of the standardization of accounts could be made exceedingly valuable to the members since they could turn in to the secretary the figures covering their operations in such way as to not reveal the identity of the concern rendering such statement, and the secretary could, from these statements, by combining the same, arrive at most useful information covering what should be the normal and reasonable cost of production, assuming the difficulties of manufacture to be the same in all localities.

Of course, there would be variations that would be the result of local conditions, but these could be taken into consideration and would manifest themselves when the management of a plant compared its own figures with the composite results obtained by the combination of the results of all of the plants interested. That is to say, if he found that his brick when delivered from the cutting machine or press stood him 25 cents more per thousand than the normal cost at that point, he could be enabled to investigate, discover, and probably eliminate the cause which had brought his cost higher at that point. In similar manner, comparisons might be had at every point in the process of manufacture and a movement set on foot to reduce costs wherever they seemed to be above normal.

Urges a Uniform Working Basis.

It is of importance to a trade association in discussing the best methods for handling the business of its members, that all of the institutions concerned be upon the same basis in the matter of their treatment of accounts in order that the same account may mean the same thing to each manufacturer. In this connection it is proper to observe that in the case of a certain trade association it was discovered that overhead expense was not treated as being composed of the same items by any two of twenty-one members of the association. Some members included in overhead expense items that were excluded by other members, and vice versa, with the result that a comparison determined the members of that association to bring about a reform in this direction, with the result that a committee was appointed which definitely designated all charges which were to be a part of overhead expense.

After the adoption of the recommendations of the committee in this respect, other items entering into the cost of production were taken up and carefully analyzed and classified, and finally a situation was realized which permitted of an intelligent discussion of the comparative cost of production in different plants and under different managements. The result to the association concerned has been exceedingly beneficial and has assisted many manufacturers in so changing their methods and guarding their expenditures as to materially increase the profit resulting from their operations.

It is a curious fact that manufacturers will differ widely in their opinion as to what is the cost of production of their output. Some will insist that the cost of production is represented by the material and labor only, others will add fuel, power and factory expense, still others will add other items, whereas as a matter of fact, the cost of production should always include a proportion of the expenses of the business made necessary in order to successfully operate it. A proportion of the salaries of the management, a proportion of office salaries, insurance, taxes and depreciation of clay deposit should be regarded as elements in the cost of production. The cost of production is that cost which represents the expenditure up to the point where the manufactured product is ready for sale.

At this point cognizance should be taken of selling expense, which should include, besides salaries and expenses of salesmen, advertising, cost of loading for shipment, and every other item which has to do with the disposition of the product.

There will still remain the cost of administration, which will include management salaries, office expense, salaries of office employes and all other expenses that have not been borne by the cost of production or the cost of the selling.

In a properly designed system of accounting, most of the administration expense should be absorbed through the application of a percentage to the cost of production. With the cost of production and the cost of selling known, the cost of administration having been spread over the production, there should remain no problem for the management in making prices. Their experience which accumulates from month to month and is of record will be a safe guide to follow in the matter of price making, and it will be possible to foretell with almost perfect accuracy, the profit to be enjoyed from each individual sale at the time such sale is made.

Interest on Borrowed Money Not Included.

It is proper to note at this point that interest paid on borrowed money has nothing whatever to do with the cost of goods produced and sold, from an operative standpoint, nor should the practice of charging interest on the value of the plant and equipment against the product be indulged in. The items which are permitted to enter into the cost of the goods produced should be only those which would be considered as elementary, and, so far as interest on the value of the plant and equipment is concerned, this could be looked for out of the profit to be secured in fixing the selling price of the goods produced. The use of borrowed money is of course necessary in most enterprises, but in order to determine what the enterprise is doing, in the matter of operating results, it is erroneous to include interest paid as a charge against operations. After the profit from operations has been established, it is of course proper to deduct payments of interest, but the point that is desired to be made here is that under no consideration should charges for interest be permitted to enter into any cost calculation.

Theoretically every institution engaged in business is assumed to be provided with sufficient capital for the transaction of its business, and it is unfair to the business to charge it with the interest to be paid upon borrowed money through the insufficiency of the capital of the enterprise. Likewise, interest on the value of the plant and equipment has no part in cost calculations for the reason that the object of the operation of an industry is to secure such a profit as will return the interest value of the money invested in the enterprise, plus a reward for the business hazard to which the money invested is put, plus also as much surplus profit as it is possible to obtain.

Suggests Perpetual Inventory System.

In the brickmaking business, with a proper cost accounting scheme in operation, it should be possible to maintain what is known as a perpetual inventory by means whereof the stock in hand may be known at any time. In this particular the brick industry, as compared with other lines, enjoys a decided advantage since it is possible to keep a fairly accurate count from the time the brick are cut, through the drying and burning processes to the yard, from which, it is easy to keep track of the reduction of stock through shipments made.

It is realized that the paper here submitted treats the matter of cost accounting upon very general lines. It is regrettable that it could not be made more specific, but it is believed that to attempt to treat the matter upon other than general lines might provoke misunderstanding, because of the fact that the terms used might not mean the same thing to different manufacturers, and because further it would be improper to leave the impression that the individual needs or peculiarities of each plant need not be considered.

As a matter of fact the individual peculiarities of each

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plant must be taken into consideration and provided for in connection with the cost accounting system which will be worthy of the name, and until the accounts of the brickmaking industry are thoroughly standardized nothing but confusion could result from a discussion of accounting terms for general application.

The individual peculiarities of the various plants to which reference is above made, is intended to represent such differences as exist in instances where clay is mined almost from the surface of the ground, whereas, in other instances, the mining takes place many feet below the surface and in the same method as obtains in the mining of coal.

In some plants the matter of conveying the clay to the crusher involves a haul of considerable distance by trolley or otherwise, while in some other organizations the material is close at hand and involves but little expense for conveying. In a few plants which have come under the observation of the writer, the mining involves the separation of the cost between the clay used in making brick, and other materials which it is found profitable to mine at the same time, and, in some cases, for uses entirely removed from brickmaking.

Must Allow for Varying Conditions.

In standardizing the accounts of the brick industry proper allowance should be made for these variations from the ordinary conditions which prevail, but until such standardization takes place, any attempt to be specific will prove to be productive of misunderstanding, misinterpretation of terms, and a generally unsatisfactory view of the situation.

In conclusion, it is desirable to summarise the statements contained in this paper into the following:

That no business can be conducted safely without a knowledge of the cost of the goods sold; that the knowledge of the cost of the goods sold be obtainable only through the medium of a properly designed cost accounting system; the same being one that is without complication and without the multiplication of office help and which will reveal the cost of production at the various stages of the productive process.

That in any given industry where such action is feasible (the test of feasibility being the practical similarity in nature of the article produced) these should be a standardization of accounts and a determination of what various terms and titles mean, to be settled upon and agreed to by those concerned in the industry, to the end that a better understanding of his own business may be arrived at by each individual proprietor through comparisons that will be made possible when accounting methods are uniform.

There is every indication the American Face Brick Association will make itself felt before the close of the present year and the men who are guiding its destinies are capable and possess all the necessary energy and initiative.

Banning is Given Honors.

F. B. Banning, of Fayette, Ia., is one of the biggest Odd Fellows in that state and he is a mighty good chap to meet. He is affable and is a boomer of brick, being in the contracting business in his home town. The Iowa State Association thought so much of the work of Mr. Banning that they sent him to Chicago to plan and superintend the construction of the exhibit "Made in Iowa." That he made a good job of it goes without saying.

ARE YOU A CHALDEAN?

Four hundred and nine clayworkers joined this new secret organization at a recent convention. See page 516 and write for information.

N. B. M. A.—Its History

(Continued From Page 487)

a place, in fact, where technical discussions could be started and carried out to some sort of completion, and where the technical side would be the important and valued side of the meetings, instead of being in the way and a drag on the market.

Twenty-four hours later, eleven men got together and spent the evening in planning the outline of the new organization, which it was agreed should be formed, and a year later, twenty-one charter members held their first session at Columbus. Such was the birth of the American Ceramic Society. Like Eve, it sprang from Adam's rib. I suppose it must have hurt Adam a little—it's been hurting him ever since—but, after all, it's a pain that all Adams are mighty glad to endure and which you couldn't induce them to part with.

Proves of Value to Parent Body.

So with the N. B. M. A., some of its best and most loyal members didn't like this off-shoot organization, and saw only weakness and injury to the parent organization, in its formation. But, after fifteen years of side-by-side existence, I don't think anyone can really say that it has so proven. It has been managed by persons who remained in the N. B. M. A., and worked for its interests. It has done work which the N. B. M. A. could not do, and did not want to do. Its needs are not identical, and its membership is not identical, or even largely common to both organizations, but its results have in my opinion been of very great value to the parent organization.

The American Ceramic Society has published fifteen big volumes, comprising over five hundred technical articles, and over 6,000 pages of text. It comprises by far the largest single source of technical writings upon the clay industry in the English language, and is the most up-to-date. It has over 500 members, of whom fifty or more are from foreign countries, and it has won National and International recognition from scientific and engineering organizations in every civilized country.

I think this record of success briefly recited above is a cause for just pride to the N. B. M. A. This organization, which has done so well, is an offshoot from us. Without us, it might never have been formed, or it would certainly have grown up in a very different channel. We are entitled to glory in its progress and its successes, just like an old schoolmaster who swells with pride over the achievements of a former pupil who has become a mathematical genius. The old man taught him his arithmetic, and pounded some sense and some manners into his head when he came under him, but he doesn't resent it now, because this boy has made use of this training to win a place in the mathematical world.

Gives Birth to Other Associations.

Beside the American Ceramic Society, this parent organization has given birth to a number of others—The Clay-Working Machinery Manufacturers, Paving Brick Manufacturers, The Building Brick Association of America, The American Face Brick Association, and various others which have been formed or proposed.

Every one of these have a distinct purpose, which the N. B. M. A., does not fulfill, and **does not want to fulfill**. If the topics that these other associations discuss were taken up here they would lead to inevitable dissension, for in our membership is a great diversity of interests, many of which are conflicting in some degree. We have found the one common ground, upon which all can unite and work together.

In fact, as I look back over this quarter of a century's work of this association, I am filled with wonder and with pride that we have shown such astuteness in steering our course. As I see it now, the least variation from the course we have pursued would have brought us to wreck, and now at the end, we have our central organization, stronger than ever, and surrounded with a whole bevy of smaller bodies—each distinct in its organization and purposes, but all loyal to the parent body, and unwilling to take over any part of its function. What more could generalship accomplish?

What is the motive power or the controlling force of all this intricate and interlacing series of activities. We have seen that the N. B. M. A. has been itself an active social force, and a sort of Extension School for clayworkers; that it has built up and encouraged other technical schools. That it has established

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standards; carried on researches, organized branch organizations, and stimulated the Clay Industry of America, thorough all these and many more less clearly defined methods. And what is the key note of it all? Is it self and pelf, or is it broad-minded altruism and patriotism?

We cannot divorce our interests from those of our brother man. The altruist is one who sees this principle and who acts upon it—he who in helping himself is glad to help his neighbor—he who wants to get ahead, but who wants to take his neighbor ahead with him instead of climbing over his prostrate form.

Fears Too Much Self-Sacrifice.

I hold that it is entirely possible to exhibit too great a degree of self-sacrifice in this world. It is not a common failing, as all will admit. But self-sacrifice may run to seed, like any other fad or fancy, and become no longer either effective or desirable. The old flagellant monks, who beat their backs with knotted whips daily, in atoning for the sins of the world, seem to me a case in point. They would have contributed much more to the good of the world if they had come out of seclusion, and spent their energy and thought in productive work for the common good.

I hold that the most desirable citizen and the greatest man is he who succeeds in his work while subjecting himself to the best interests of all—the man who succeeds and yet helps others to succeed. This is the crowning achievement of Christian citizenship. And I hold that organizations, as well as individuals, may exemplify these principles and that our beloved Association is a very good case in point.

Suppose an organization undertook to get along in the business world without recognizing the principle of altruistic cooperation, and said by its attitude, "We don't care to co-operate—we are quite able to push our own way, and others must push theirs. Our technical staff will advise us, and our legal staff will keep us out of trouble (or in it) and our sales organization knows how to reach the consumer, and will advise us as to what the public want. We don't care to educate the public." Do you think such an organization ever gets far? I don't. I've seen it tried.

An organization formed upon frankly selfish lines may undoubtedly operate successfully to do its appointed work, and, such organizations have their place. They concern themselves chiefly with (a) maintenance of prices, (b) maintenance of wage agreements, (c) maintenance of selling agencies, (d) maintenance of promotion bureaus, (e) maintenance of private laboratories and private technical staff, (f) maintenance of transportation and freight rate bureaus, (g) maintenance of tax, insurance and protective bureaus.

Money Must Not Be Sole Aim.

This is all good and useful work—in its place! We all want to make money—we must make money in order to succeed, and without success, we can't help others to succeed. But an organization which starts in with its eyes firmly fixed upon the above objects, and no others, will never get anywhere. The man or the organization who loses his altruism, and becomes wrapped up wholly in a struggle for selfish advantage cannot reach real success. He may get wealth for a time, but he'll never get happiness.

The N. B. M. A. has thus far been an altruistic organization. There have been those who have advocated converting us into a big publicity organization—who would raise our dues to a much larger sum per annum, and with the money inaugurate a campaign to boost brick everywhere for every purpose. These people have called us old fashioned. They have said, "Get out of your rut, and get up and do something." I want to raise the question whether, under such leadership, the N. B. M. A. during the last twenty-five years would have as much concrete good to show as it now has? Would a publicity bureau have done the things that we have done? Would the things that a publicity bureau would do, properly take the place of what we have done? Every one will have his own opinion on these questions, but I know mine!

The publicity work needs doing, but after all, it's only one small factor in our work! I believe in it, and have done my share to help it along. But those who would convert an organization which has to its credit the list of achievements herein set forth into a publicity organization, surely need mental perspective, for they fall utterly to distinguish the really big things of life from the little and incidental.

The N. B. M. A. has chosen the higher field. Let it remain an altruistic organization. On this basis and on it only, all can co-operate. Leave this high plane for any selfish end and discord would at once arise and disruption soon follow. Brotherly

love has made this organization what it is. Its achievements are no small ones. They constitute an honorable record.

But there is as much to do now as when we began, to all intents, and we need our old enthusiasm and our old unity of purpose to do it successfully. Let us therefore go forward upon our pathway, unheeding those who would lead us off into the by-paths of selfish commercialism or those who would weigh us down with the ball and chain of ancient usage and established precedent. Scientific study of our business should be our watchword! Co-operation in applying the fruits of scientific studies should be our plan. Fixed belief in the brotherhood of man in general and clayworkers in particular should be our rallying cry. These three will ensure for our Association a future as bright as the past has been honorable. (Loud applause.)

Chaldean Dies Suddenly

Harry B. Holmes, of the Wisconsin Lime & Cement Co., Chicago, died Saturday, March 29, at his home in this city, after an illness of only two days from pneumonia.

Mr. Holmes was one of the best known young men in the local clay product field, manager of the paving brick department of the firm with which he was connected. He was born at Milton Junction, Wis., Aug. 12, 1875. For a number of years he was connected with the Chicago Demurrage Bureau, which place he left to enter the employment of the Wisconsin Lime & Cement Co., as traffic manager, in 1907. When the Wisconsin Lime & Cement Co. opened up its paving brick department Mr. Holmes was transferred



from the traffic desk to take charge of the paving brick department. In the course of his work in that field he made many friends among the paving brick manufacturers, contractors and engineers with whom he came in contact.

Mr. Holmes was one of the charter members of the Ancient Order of Chaldeans, the recently organized secret society among the clayworkers, and held the position of inner guard in Chicago Temple No. 1. The Chaldeans will have representatives at the funeral service, the date for the same not having been set at this hour.

Mr. Holmes leaves a wife and son, the latter being 5 years of age.

URGES WORKMEN'S COMPENSATION BILL.

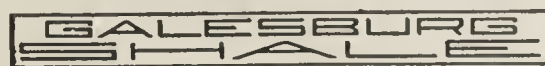
Proposition Before Ohio House Forces Employer to Provide for Injured Employees.

With the passage of the Green bill, known as the compulsory workmen's compensation bill by the Ohio House of Representatives and its signing by Governor Cox, all of the brick manufacturing plants in the Buckeye State will be given liability insurance by the state. The bill provides that every individual, corporation or firm which employs five or more persons must pay into the state board of awards a certain percentage of the yearly pay roll.

The state board of awards is given power to provide compensation to injured workmen and benefits to the dependants of employes who have been killed while employed. The law provides for a schedule of compensation for the loss to members, such as legs, arms, and eyes.

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Trade Review

NEW PLANTS AND ADDITIONS.

The Zumbrota Brick & Tile Co., at Red Wing, Minn., has been incorporated with a capital of \$15,000. The company will buy and sell brick and other building material. The incorporators are: W. L. Bever, A. J. Anderson, F. C. Marvin, J. A. Johnson, H. E. Weiss, J. D. Grover and P. T. Swenson.

J. E. Kimsell's interest in the Bay City (Texas) Brick & Tile Co. has been purchased by Frank Meredith, of Rosenberg.

Dr. G. Kimball, of Camden, Ark., and his associates are making plans for the organization of a million-dollar corporation in Ouachita County. The plans call for the construction of a pottery plant.

Whether Hutchinson, Kan., will have a brick plant or not will be decided by two eastern brick manufacturers, who with F. W. Tyler, secretary of the Commercial Club, inspected the clay and shale deposits and took samples to be burned and tested.

The Missouri state legislature at Jefferson City passed a bill calling for an expenditure of \$50,000, to be used in the construction of a brick plant at the state prison.

The National Terra Cotta Co., a \$150,000, incorporation, has been organized at Kansas City, Mo., by Andrew F. Brooker, B. A. Green and Richard P. Edwards.

G. W. Buer will establish a plant to manufacture brick and pottery at Milano, Tex.

The Rosenberg Brick & Tile Co., 316 Southern Pacific Bldg., Houston, Tex., has been chartered with a capital of \$100,000, to manufacture brick.

D. Odem is reported interested in the establishment of a brick plant at Sinton, Tex.

With a capitalization of \$75,000, the Granite Brick Co. has been organized at Michigan City, Ind., to manufacture brick and sell sand. The incorporators are Frank J. Hinkamp, Ernest Boettscher, Louis Holletz and Anton Schmidt, all of Chicago, and August C. Heitschmidt, of Michigan City.

The Long Vitrified Brick Co., recently organized at North Judson, Ind., will make common and face brick and tile. The company is capitalized at \$65,000. Those interested are: Glenn D. Peters, Jno. W. Long, J. J. Urschel, O. C. Maurer and B. H. Thompson.

The Hoosier Brick, Tile & Grain Co., capitalized at \$10,000, has received a charter to manufacture brick and drain tile at Moore, Ind.

The Black Hawk Clay Mfg. Co., Davenport, Ia., is making plans to install electric drive at its large plant.

NEWS OF THE CLAY WORLD.

The Ed. H. Callaway Engineering Co., 50 Church street, New York City, has perfected a system of conveyors for handling brick from machine to dryer, drying shed, or drying racks and when dry to kiln and when burned to car or boat, thus dispensing entirely with trucks, barrows and cars as well as a large percentage of labor. This company also has an improved system of drying and burning brick.

A manufacturer in Cambridge, Va., recently had occasion to inquire into the matter of exhaust fans. He remembered that there was a manufacturer of such machines in Detroit, but did not recall the name, consequently addressed his letter "Manufacturers of Blowers for Planing Mills, Detroit, Mich.," which letter was promptly delivered at the office of the American Blower Co.

C. M. Rathbun & Co., manufacturers' agents, 225 Milk Bldg., El Paso, Texas, are in the market for all grades of face, rough texture and enamel brick, fire brick, terra cotta and all grades of tile.

W. E. Dunwody, president of the Standard Brick Co., Macon, Ga., recently favored us with engraved cards,

announcing the opening of the new Hotel Dempsey at Macon.

The Composite Brick Co., of Jacksonville, Fla., is planning the establishment of a new sand-lime plant at Jacksonville.

The Taylor-Wharton Iron & Steel Co. announces that H. A. Johann and Martin O'Shaughnessy, who have been in charge of the Chicago and Middle West territory, having resigned to engage in other business, the Chicago office of the company will be in charge of Geo. R. Lyman and J. R. Bolgiano, with Guy H. Bergen, representing the company particularly in the Massabe range district.

The White Hall Sewer Pipe & Stoneware Co., White Hall, Ill., has recently sold its public service department of lighting and heating for \$100,000 to the Illinois Public Service Co.

As a result of the Southern railway exhibit, showing the large variety of valuable clays to be found at many points throughout the south, it is predicted that many new plants will be established throughout the south and southeastern states. The exhibit at the Clay Show attracted much attention and the attendants were kept busy giving information as to the location and extent of the deposits.

The cement floors in the court house at Omaha, Neb., were found not acceptable by the architect in charge, the work being defective and not up to specifications.

Construction work is being rushed on the plant of the New Mexico Fire Brick Co., at Gallup, N. Mex. A rich deposit of fireclay has been uncovered which will be used in the manufacture of various forms of fire clay products.

Mills & Son, Chicago contractors, are building seven hundred brick bungalows in that city. They are built for sale and are being disposed of as rapidly as they are completed. The firm uses brick exclusively because it considers them the best on account of their fireproof quality, sanitation, freedom from deterioration and cost of upkeep.

Reports from Boston, show that brick continues to move out of the yards on to jobs in gratifying quantities. A comparison of the deliveries so far this year with those of the corresponding period in 1912 is very satisfactory to producers.

On an attractive blotter, the Atlas Car & Mfg. Co., of Cleveland, O., announces that owing to the large increase in business it is building a modern factory on recently purchased property on Ivanhoe Road, Cleveland. The plant which will be equipped with the most approved machinery and appliances will be ready for occupancy about May 10th.

The Trimble Paving Brick Co., at Dayton, Ohio, has incorporated with a capital of \$350,000, and will take over the plants of the Trimble Paving Brick Co., at Trimble, Ohio, of which J. E. Conley, of Dayton, is president, and the Wassall Brick Co., of Glouster, Ohio, of which E. A. Lewis is president. The consolidation of these two plants has taken place to bring about certain economies in operation and to eliminate possible labor disturbances. The capacity of the two plants, located one mile apart, is 60,000 brick daily, and this will be increased to 100,000. Headquarters will be located at Dayton.

The Hydraulic Press Brick Co., of St. Louis, Mo., has established a branch office at Davenport, Iowa, having its headquarters in suite 401 New Putnam building.

Officials of the Capital City Vitified Brick & Paving Co., at Topeka, Kan., announce that the firm will devote practically all its resources to the manufacture of common brick the coming season. There are a large number of orders received for this material and as all the brick for paving purposes will be supplied by outside plants, the company decided to work along that line.

The Chanute (Kan.) Brick & Tile Co. discovered gas again in its second well on the Rudolph Schwartz' land, three-fourths of a mile west of the company's plant.

NEW YORK.

New York, March 22.—Into the Eastern brick situation has been projected a condition which is not at all to the liking of either the dealers or the manufacturers. There is little new building work in progress, the river is closed and the stacks held here for a possible raise

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are still large with the prospects of continuing in this condition for several weeks longer. In the meantime, if the river ice flows out and the manufacturers begin to ship more brick into New York, these self-same stacks will prove to be veritable white elephants on the hands of the dealers instead of becoming the expected sources of speculative profit. In consequence, prices are weak, the range is wide, so wide that it is almost impossible to quote a commercial price-range that will last from one day to another, and those who are holding covered brick put it on an almost prohibitive level, so as to make sure of keeping it for their own use.

This, in a paragraph, tells the whole story of the New York situation, as viewed by the pessimists. But there are ramifications to the market which should make interesting reading to those manufacturers who are basking in the luxury of their Pennsylvania pot-stove heaters in their up-river homes and waiting for the spring thaws to get in their fine work. They put a very decided crimp into the pessimistic views entertained in some quarters and lend solid foundation to the optimism held in other sections.

About the volume of building operations going ahead at present, it can be stated with authority that there is more building work going on this year than there was last year and 1912 was a record breaker in some respects. Heed the figures which are official and come from the Bureaus of Buildings in municipalities in three states. Up to the first of March, 1912, there were only 1,364 new building plans filed. Up to the first of March of this year there were sixty-three more, or 1,429. These figures cover New York city, proper. For the entire Metropolitan district, or thirty miles in radius from the City Hall of New York, which includes municipalities in three states, New York, New Jersey and Connecticut, the first two months in 1912 there were 2,489 new building plans filed. In the same period in 1913 there were 3,912. The value of this year's new building projects show a gain for 1913 of \$5,597,135 over that for a similar period last year, but in New York city proper, the first two months of this year show a shrinkage in value from \$23,623,155 in 1912 to \$18,190,473 in 1913 or a falling off of \$5,532,682.

A large part of this wide difference in figures is attributable to the weather conditions prevailing this year and last. At this time, a year ago, everything was in the grip of an almost unprecedented cold spell. This year open weather has prevailed, brick has been shipped to market through January and a large part of February and building construction has not been checked more than a day or two at any time. Frame construction and brick work usually can go ahead except in extreme cold weather, which accounts for the remarkable showing made in the outlying parts of the Metropolitan district. On the other hand, heavy masonry construction work is dependent to a larger extent upon good weather conditions which, through timidity, rather than actual holding of work already in progress, has prevented new building work from coming out in proportionate size to that in the suburbs.

This, of course, would not affect the value of these operations. But there is another cause touching this point. It is the higher cost of construction work. Here is where some manufacturers find their chief cause for worry. Let us see if his concern is well grounded.

The greatest increase in cost of construction is in steel, lumber and Portland cement. These factors alone will this year bring the cost of construction up to a level at least ten per cent higher than it was in the last half of last year which was considered a stiff-priced six months. Lighter construction, made possible by the increasing use of architectural terra cotta instead of stone and by the increased use of hollow tile reinforcement in lieu of heavy, massive, reinforced concrete, means that the consulting engineer and the architect can clip off cost here and there in the skeleton or frame work of the new metropolitan operation.

In the matter of lumber for flooring and trim, the tendency is to use fireproof composition or kalomein, thus shaving off cost a little more. In the case of Portland cement, which will be further stiffened because of the increase in price of five cents a cubic yard, after April first for sand and cinders and a higher price in crushed stone; the adoption of the raked joint idea in facade work, will reduce the total volume of cement

mortar required and this will enable the architect to curtail his costs a little more.

Then the fancy extras, like massive projecting cornices, marble or granite facades are giving way to architectural terra cotta, all help to cut down the cost and to bring the total value of new buildings for the city down. Counter-balancing this, the suburban home builder is going in to compete against the luxurious appointments of the city apartment house and this brings his value way up beyond what it was last year in proportion to the volume of new buildings projected.

Development companies which were satisfied to put up \$7,500 to \$15,000 suburban homes ten years ago and \$25,000 to \$30,000 homes two years ago, are now putting up \$50,000, \$75,000 and even \$100,000 residences and they are being taken as quickly as built by former occupants of apartment houses which have been crowded in by their neighbors until the \$12,000 a year suite of ten or twelve rooms and bath are as much hemmed in as the \$20 a month cells in an old law tenement house. This accounts for the discrepancy between the value of New York's new construction work and the value of the projected new buildings now in progress of erection in the suburbs.

Here is where the analysis should appeal strongly to the brick manufacturer. Any curtailment in cost that architects and builders will make upon their new buildings this year will not affect brick masonry construction for the reason that the raise in the price of concrete reinforcement and in the cost of Portland cement, sand and crushed stone will give the brick producers a glorious chance to knuckle down, get together and adopt a selling campaign like those suggested in every issue of this paper and, with a talking point like that of solid construction at less cost than concrete construction, they should be able to stir up the market here and get back some of the prestige that they have lost through indifference to their opportunities here in the east for years.

PITTSBURGH.

Pittsburgh, Pa., March 26.—Judging from the number of inquiries being made at the offices of local architects, there will be a large amount of apartment house building done in the Pittsburgh district during the coming spring and summer. And, all of these will be built of brick.

It is only during the last few years that Pittsburgh builders have got into the apartment house "game," and inasmuch as they have found it to be a profitable one, there is no telling where building is to end.

The story has also come to the surface during the last few days that Marshall Field & Co., of Chicago will erect a mammoth department store here during the coming summer, and of course clay products will be used to a large extent in this construction work.

Quite a number of individual homes will be built in the suburban districts of Pittsburgh this season, and the majority of these will, it is said, be constructed of hollow building blocks with brick facing. Little if any cement is to be used, for the brick home has the call in this territory of late.

After being idle for several weeks in order that complete repairs might be completed to the plant, the Canton Tile & Hollow Brick Co., at New Bethlehem, Pa., has resumed operations, working to capacity, and with a well filled order file.

So many improvements have been completed at the plant of the C. F. Thomas & Son Brick Co.'s plant at Waynesboro, Pa., that it is almost like an entire new property. The plant is now working full time, and the capacity has been about doubled.

According to information brick machinery men here have received The Independent Gravel Co., of Joplin, Mo., will erect a brick and tile plant at Webb City, Mo., at an early date.

The Ferro Brick Co., is the fourth brick manufacturing concern to start business at Watertown, Pa. The company has begun the erection of a new and modern plant, and it plans to manufacture a general line of building and face brick and also paving brick. It is possible the construction will be completed within three or four months. Contracts for machinery are said to have been placed.



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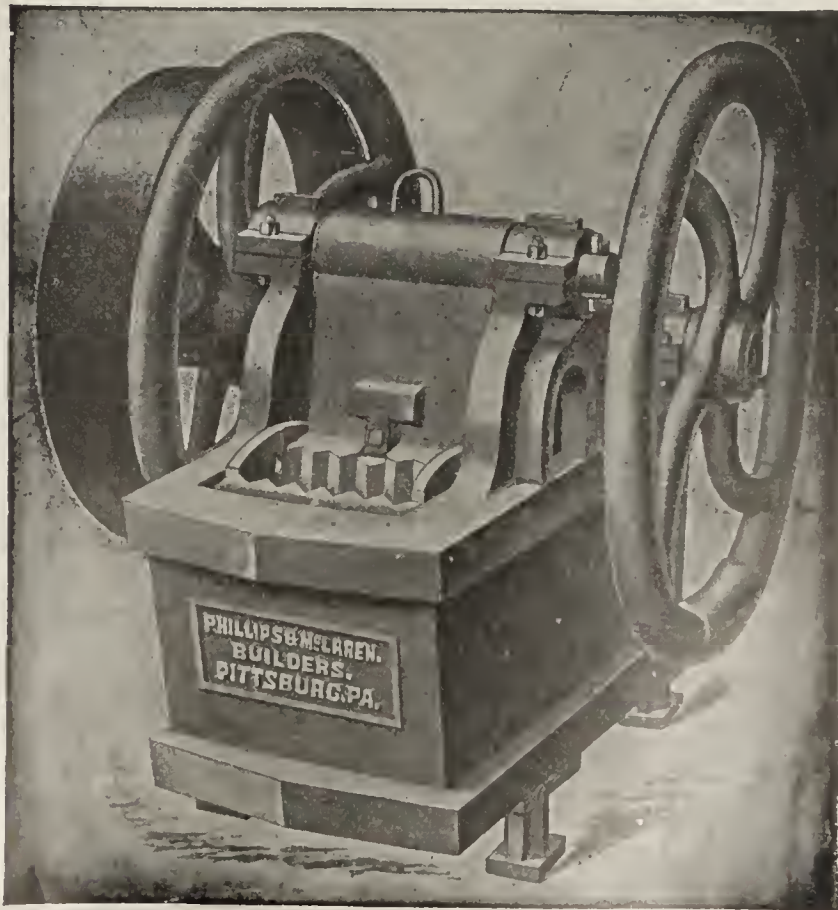
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Executive Committee: G. Silvester, Calgary, Alta.; E. G. Chapman, Minneapolis, Minn.; E. M. Burchfield, Rochester, N. Y.; H. H. Tift, Tifton, Ga.; L. W. Penfield, Willoughby, O.

The recent convention of the Sand-Lime Brick Association at Toronto, Can., was one of the most enthusiastic ever held by that organization and the address by the president, W. H. Crume, of the Crume Brick Co., Dayton, O., stirred up the delegates to renewed activity in association work.

President Crume is one of the most progressive manufacturers of sand-lime brick and took exceptions to the recent attacks made on the industry. He said:

Some months ago the United States Geological Survey issued a bulletin on "The production of Sand-Lime Brick in 1911," showing a decrease in the number of plants operating and a decrease in the total value of the brick produced; in an issue of a clay trade journal ("The Clay Worker") shortly thereafter they advised their readers that sand-lime brick had died a natural death, and then, after writing the obituary, proceeded to kick the corpse around.

Our Secretary, who has been accused of many misdemeanors, but who had never been accused of being a dead one, resented the slander and then proceeded to prod some life into everyone he could reach, and, when, among others I replied that we were buried with orders, it was decreed that I should prepare a paper with a view to determining the actual conditions as I saw them.

The Government report shows that undoubtedly a number of reporting plants had ceased to operate, also that the total value of the brick made was less than in 1910; several weeks later the same department issued a bulletin on clay products, showing in the same year burned clay products had suffered a loss in value of \$7,000,000, and the greatest loss was suffered by common brick; therefore, in comparison, our showing does not look so bad.

We who attended the last convention know that most of the members present reported business as better than in 1910, though the trade conditions in some sections were such that few brick of any kind were in demand, and the report showing the great loss by the clay products industries indicates that building was considerably below normal.

I would classify the sand-lime plants into the active and the inactive factories, for quite a number of factories we know are operating continuously and progressing from year to year and the bulk of the brick reported made are turned out by these active factories, the other group have run spasmodically, run for a few months at a loss, changed ownership, started out again with inadequate capital or more often poor management, and in a few months would be out of the producing class again; now these latter plants were bound to wind up their existence and the first let-up in building operation was sure to see them drop out; others were destroyed by fire. These plants have done the industry as a whole no good and many of them never had any excuse for existing.

We all know that a few years ago, when the promotion fever for sand-lime plants was at its height, every man who owned or could get an option on a sand bank saw wealth chasing after him if he could only get a sand-lime plant started on his hill, and it did not make any difference as to whether the other essentials were there, such as market, shipping facilities or proper management. If it was possible to get together the cash the plant was started. You couldn't lose, for did not the promoters agree to make a hundred thousand brick before turning over the plant, etc.?

There have been to my knowledge in my state, Ohio, five such

factories before we started business, and we were given ample warning that we could not succeed where they failed.

One of these factories was located in the Hocking Valley, where the big face brick plants are located, having millions of culls from their clay plants to dispose of, and expected to compete with them, with the nearest city about sixty miles away and a freight rate that ate them up; another was located in Columbus and paid \$1.00 a ton for sand and expected to compete with common brick selling at \$6.50 per thousand, delivered at the building.

Another plant, located in Cincinnati, had a process all its own when originally installed, and in addition to the sand and the lime added some refuse from a fertilizer factory nearby, and had a world beater.

Now we are cited as a decaying industry, because these plants that never had any reasonable show to become successful businesses have gone out of commission.

I want to say that most of the sand-lime plants that were unsuccessful commercially did make fairly satisfactory brick while in operation, so that while from an investor's standpoint they are warning posts, the consumer was not injured, and our natural enemies can gain little satisfaction from this cause; for in our own experience we are selling customers of three of the former plants located in Ohio and we filled several orders in Indianapolis where sand-lime brick had been specified after the plant in that city had ceased operations.

These show conditions in the immediate past and bring us up to today.

From the reports received by Secretary Plummer, with the active factories, and, by the way, they are the Association factories in the main, the business was never so good before and we are on a firmer basis than at any time in the past.

Early in the fall I went to Michigan City, Ind., and there saw the North Indiana Brick Co.'s plant and from there I went to Jackson and Lansing plants, the former was in operation and the latter about ready to begin operations; these two factories had both quit business under their former organizations and had been bought up and remodeled, the latter being moved to a new location, by the Saginaw Brick Company interests, of which Mr. Jackson is the head, and there is no question but that both of them will be successful. Mr. Allan, of the Toronto Brick Co., took over an unsuccessful plant in Washington, D. C., and so we see the failures of yesterday are being turned into successful factories of today, and more of these old failures will be reclaimed.

From all that I can learn, the factories that have reported are almost without exception having the busiest year in their history. The factories in Michigan were all busy when I visited there, our own factory has been running at capacity and selling all we made and we have all the business we can handle for months ahead, and the Canadian plants will outstrip the States at their present rate of progress.

The clay journal mentioned before stated that a sand-lime plant could not exist where there was clay brick competition. Look at the Michigan City plants in the Chicago market, the greatest brick producing market in the United States, the two Detroit plants with strong clay brick competition; in our own city where we started, they were operating seven clay brick plants, there are now four clay brick plants to compete with.

Seventy-five per cent of our brick are sold through architects' specification, they being specified outright or in many cases either hard-burned clay brick or sand-lime brick; and in this connection I want to cite one order on our books. It is for about two hundred thousand brick and is from one of our clay brick manufacturer competitors, who is also a brick contractor, and who bought our brick when awarded the contract because he figured it was cheaper than to skin his kilns to get the all hard-burned brick, which he knew would be insisted on in this job.

The Sand-Lime Brick Association has done more to make the business successful, the quality of the brick better, and has saved more factories from going on the rocks than any other factor, and you men who have problems that seem impossible to solve, will do well to attend the meetings and ask questions and when you find someone who has valuable information bearing on your trouble, buttonhole him and get all the experience you can from him, for we brick manufacturers are here to get and to give all the information we can and have no axes to grind.

The benefits, and I mean by this direct ones, that our company has received through the Association cannot be figured in dollars and cents, for had it not been for the information we were in position to get from the Association through Mr. Plummer, we could not operate our plant today.

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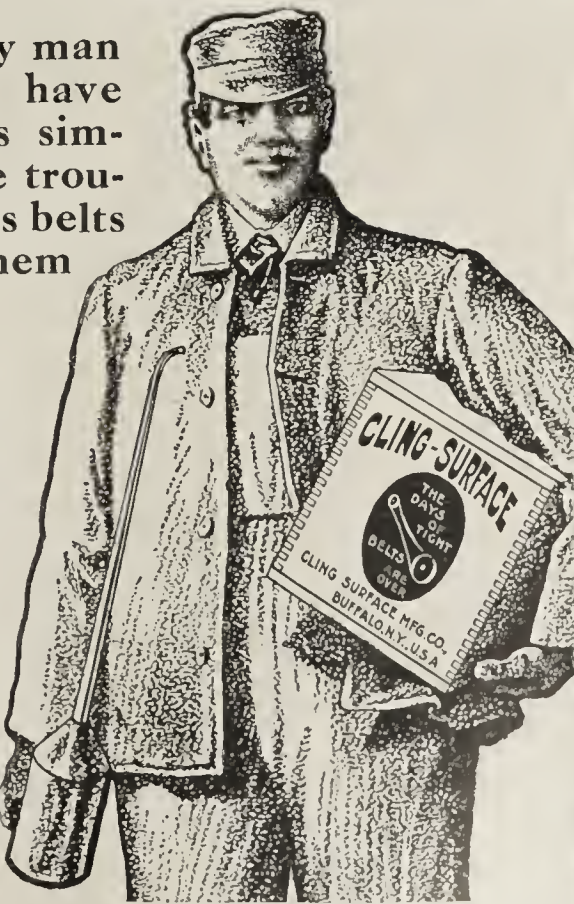
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We got up against a coarse sand proposition after having run successfully for a year or more, that seemed likely to swamp us, but Mr. Plummer had been up against the same thing and had solved the problem, and he got the Big Idea that put him on the right track through something he had heard at the Washington convention, and many other plants have followed; then after Mr. Plummer had put us next to the wet pan, he told some of us our lime hydration systems were clumsy and wasteful of labor, and that the bin or storage system of prehydration was better, so many of us have adopted that.

Now these things that have meant so much to us in a financial way have cost us nothing but the asking, and the slight outlay for dues and trips to the convention, and had it not been for the Association, all the money we could have raised would not have brought us the information; and then, for the last couple of years we have had our good friend Emley to diagnose our ailments and help us and show us the way to cure ourselves.

The enthusiasm we all take back with us after the meetings is worth more than we can measure and compensates for many of the knocks and bruises we get from day to day, and that pays too in dollars and cents because we jump in and fight many battles that we would otherwise be inclined to shirk.

These two thoughts I hope you gather from what I have said:

First: The sand-lime brick business is on a firmer foundation and is more successful than at any time since it was introduced in America, and,

Second: To the American Sand-Lime Brick Manufacturers' Association is due the lion's share of the credit for the marked improvement in our present conditions.

The first essential in going into the sand-lime brick business is not machinery or sand or lime; it is the knowledge that a man must have, and that he may gain by going into this Association and finding out what other manufacturers have experienced, in order to know whether he wants to go into the business at all. I thank you.

President Crume's paper brought forth considerable discussion in which R. C. Penfield was the leader. Mr. Penfield said:

I take pleasure in making a comment or two in confirmation of the statements made in that paper. I happen to know intimately the history of some of the plants that have been cited as examples of plants that have failed. One of those factories in Indianapolis, during its period of formation, labored under the opposition of the editorial writer who has been referred to. That editor said in his paper all that he could, and in his discussions around town, personally made all the statements that he could that were derogatory to the project, as a project. That opposition made it difficult for the promoter to raise the required amount needed to finance the proposition. He made an excellent brick and had the proposition been properly financed, it would have been a good, going concern. There was no reason for failure except largely the direct opposition of the editor of this well-known publication, and the fact that the project was not sufficiently financed before construction was commenced.

One other project in Columbus expected to get its sand from Sandusky. It seems absurd that in a state like Ohio, so well supplied with the finest quality of clay from one end of the state to the other, a company should be organized in the centre of the state to make sand-lime brick, expecting to get its supply of sand from Lake Erie. Yet that was the basis of its operations and one of the causes of its failure.

Another cause of failure mentioned this morning by our friend from the chilly North has as much to do with the success of a sand-lime brick plant as it does with the success of any manufacturing industry. I mean, "the man behind the gun"—the man in charge of the plant—the plant manager. Many times it will be found that a business fails or succeeds just in proportion to the efficiency, the energy and resourcefulness of the man who is looking after the daily operations at the factory.

Other speakers expressed appreciation for President Crume's remarks and agreed with him that the wave of criticism would really do the sand-lime manufacturers more good than harm.

A \$100,000 brick plant is being established at Robstown, Tex. It is said to be largely financed by northern capital.

NEW FREIGHT TARIFFS FILED

**List of Rates That Effect Clay Product Shipments,
With Rates in Carloads and Per Hundred Pounds
and Dates Same Become Effective**

Washington, D. C. (By Special Correspondence), March 8.—Since our former issue the following new tariffs have been filed with the Interstate Commerce Commission, naming rates on brick, clay and clay products with the I. C. C. numbers, effective dates and rates in carloads per hundred pounds, unless otherwise stated:

N. Y. C. & H. R., I. C. C. B-18457, March 11. Brick, and clay products and articles taking the same rates from Brighton, N. Y., to Binghamton, N. Y., \$1.50 per net ton.

Phila. & Reading, I. C. C. Order No. J-3767, March 20. Clay from Mertztown, Pa., to New Brunswick, N. J. \$1.50 per net ton (R).

Northern Pacific, I. C. C. 5239, R. R. 2071-C, State Feb. 14, interstate March 21. Brick (except glazed and enameled), common, pressed, paving, fire, hollow or building, to Power House and Nachez City, Washington, from Seattle, and Tacoma, Wash., 13c; Pontiac, Wash., 14c; Big Six, Wash., 10½c; Kennewick, Wash., 9½c (R); also common and paving brick from Power House and Nachez City, Wash., to Tacoma, Seattle and Renton, Wash., 11c (R).

Buffalo, Rochester & Pittsburgh, I. C. C. 4384, March 21. Building and hollow brick, hollow building blocks and hollow building tile from Orchard Park to Jewettville, N. Y., to Brantford, Dunnville and Windsor, Ont., \$1.55 per net ton (R).

C. & E. I., Sup. 14 to I. C. C. 2582, state Feb. 20, interstate March 22. Brick from East St. Louis, Ill., and St. Louis to Chicago, Chicago Heights, \$1.60, Gary and Griffith, Ind., Hammond and Hartsdale, Ind. Harbor, Joliet, South Chicago, Ill., and Whiting, Ind., \$1.60 per net ton (R); Kensington, Ill., \$1.60 and Milwaukee, \$2.90 per net ton.

Chicago & Alton, I. C. C. A-549, March 22. Enameled brick from East St. Louis and St. Louis to Gary, Ind., \$1.30 per net ton (R).

Pittsburg, Shawmut & Northern R. R., I. C. C. 2257, March 23. Clay products from Kaulmont and St. Mary's, Pa., to Erie, Pa., \$1.25 per net ton (R).

Pittsburg, Shawmut & Northern, I. C. C. 2260, March 25. Clay products from Drummond, Kaulmont and Shawmut, Pa., to Allentown, Pa., \$1.90; Bayonne, Cranford, N. J., \$2.30; East Allentown, Pa., Hazard and Scranton, Pa., \$1.90; Elizabethport, Pa., \$2.30 per net ton. Reduced rates to Bayonne, Cranford and Elizabethport from Shawmut and Drummond.

Toledo, St. Louis & Western, I. C. C. A-456, March 30. Drain tile from Decatur, Ind., to Bad Axe, 12c; Chester, 7c; Hastings, 7½c, and to Ypsilanti, Mich., 7c; from Bluffton, Ind., to Freeport, 8c (R); Lansing, 8c, and to Wheeler, Mich., 9c.

Erie Railroad, I. C. C. 10303, March 31. Building brick from Dunmore, Pa., to Liberty, N. Y., \$2.00 per net ton (R).

Illinois Central, I. C. C. 8357, effective state March 10, interstate April 1. Brick from Manteno, Ill., to La Fayette, 90c per net ton.

Union Pacific, Sup. 13 to I. C. C. 2493, April 1. Brick, viz., common, ornamental, paving, pressed and glazed, from Denver, Trinidad, Colo., and rate points to Miltonville, Kan., 18c.

Chicago, Rock Island & Pacific, Sup. 32 to I. C. C. C-8789, April 1. Brick and other articles taking same rates, except drain tile, from Ft. Dodge and Boone, Ia., to Sioux Falls, S. D., 8c; brick (except bath and enameled), clay conduits, creosoted paving blocks, and articles taking same rates from Ft. Dodge, Ia., to Kansas City and St. Joseph, Mo., Atchison, Leavenworth and Armourdale (Kansas City), Kas., 7½c (R).

C., C. & St. L., Sup. 10 to I. C. C. 274, effective state March 9, interstate April 1. Brick and articles taking

Note.—R denotes reduction, A denotes advance.

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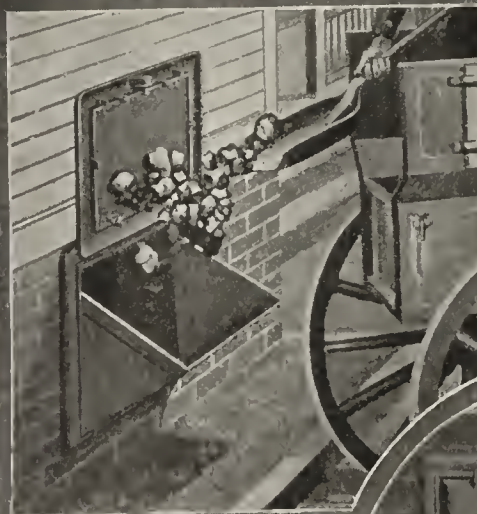
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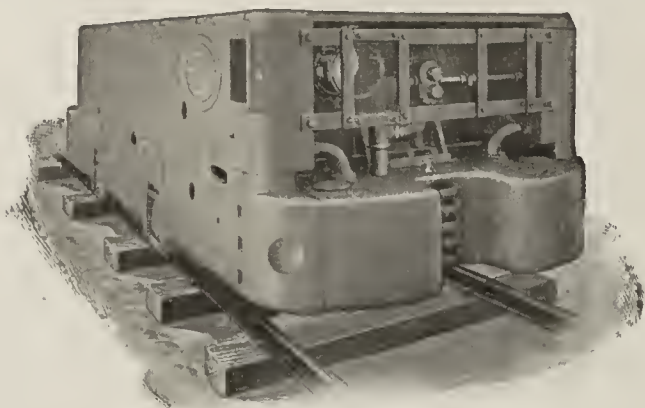
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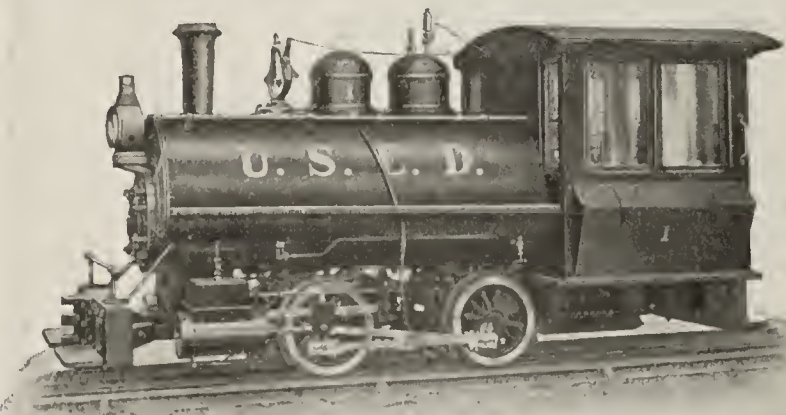
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Canadian Representative: F. H. Hopkins & Co., Montreal, Que.

same rates from Crawfordsville to Mace, Ind., 45c per net ton (R).

D. A. V. & P., Sup. 3 to I. C. C. 736, April 2. Brick and articles taking same rates from Youngsville, Pa., to Niagara Falls and North Tonawanda, N. Y., \$1.05 (A); Pittsburg, \$1.25 per net ton. This tariff carries rates to numerous other points in New York, Pennsylvania, Ohio and Illinois and should be secured by parties interested in the rates.

L. & N., I. C. C. A-12718, April 2. Brick from Mascoutah, Rentschler and Spruce, Ill., to Louisville, Ky., \$1.55 per net ton (R).

Missouri Pacific, I. C. C. A-2289, April 2. Brick (except bath, fire or enameled) and articles taking the same rates from Altoona, Caney, Coffeyville, Fort Scott, Fredonia, Gas, Independence, Iola, Kan., Red Hill, Mo., and other Kansas and Missouri points to Summit Kan., 10½c (A); Hay Spur, Neb., 13c (A); Oklahoma City, Okla., 7c; Marysville, Kan., 10½c (R); Wathena, Elwood, Appleton, Kan., 7½c; also rates to other Missouri, Kansas, Nebraska and Oklahoma points.

New York Central & H. R., I. C. C. 18506, state Feb. 28, interstate April 2. Broken brick from Mill Hall, Pa., to Woodland, Pa., 70c per net ton.

In the case of Ludowici-Celadon Co. vs. Pennsylvania Co., et al., decided January 7th by the Interstate Commerce Commission, it was held that an unlawful rate had been applied by the defendant company in applying the rate applicable to marble or slate floor tiling when the commodity shipped consisted of three carloads of unglazed tile slabs or brick tile. The shipment moved from New Lexington, O., to Springfield, Mo. Reparation was allowed to the complainant in the entire sum of the overcharge, and defendant was ordered to charge the Class D rate of 15c per hundred pounds.

ENGINEERS HOLD BIG JOINT SESSION.

Kindred Organizations in Chicago Territory Meet in Milwaukee Feb. 22.

The Chicago Section of the Illuminating Engineering Society met at Milwaukee, Feb. 22, in a joint session with the following bodies: Engineering Society of Wisconsin, Milwaukee Company Section of the National Electric Light Association, Milwaukee Electrical League, Milwaukee Engineering Society, Milwaukee Oto-ophthalmic Club, Milwaukee Section of the American Chemical Society, Milwaukee and Madison Sections of the American Institute of Electrical Engineers and the Wisconsin Chapter of the American Institute of Architects.

The program consisted of papers and talks on subjects of interest to all the societies represented. A luncheon, a trip to industrial plants, and a dinner were arranged by an entertainment committee.

STRATTON JOINS UNDERWRITERS' COUNCIL.

Government Official is Elected Member of This Important Body in Chicago.

Dr. S. W. Stratton, Director of the Bureau of Standards, Washington, has been elected to and accepted membership in the Council of Underwriters' Laboratories, whose general offices are located in Chicago.

The council of the laboratories is composed of twenty-two of the leading experts in the United States and Canada, who serve without recompense and supervise the technical work of the institution.

The growing importance and extent of the work of underwriters' laboratories in connection with the general movement for reduction of the fire waste in America, together with some work in this field which the government has outlined, make Dr. Stratton's appointment to membership in the laboratories' council a particularly happy one at this time.

N. B. M. A. Covention

(Continued from Page 515.)

to support a family, that there are but five per cent of those that enter the public schools of this country that ever finish their courses.

Believes Demand Regulates Labor.

ALFRED YATES: I have listened with great interest to this paper by Mr. Gregory and which has been endorsed by Mr. Ittner.

The question is: Science in the abstract is one thing, but science applied is another. Professor Benson tells us about putting the young man down to practical work after he has finished his scientific training.

Now, with regard to our upholding practice for the brickmaker, we should look at the cause and the effect. I think Brother Ittner is looking at the cause and not the effect.

Now, we cannot get bricklayers to lay brick when they have become concrete men, and we cannot get a market for our brick, which Mr. Ittner succeeds so well in turning out, and we cannot use these young apprentices and bring them along unless we can increase the demand for brick. There is the question of supply and demand.

MR. SIMPSON: I would like just a word to my friend Ittner's speech, something in regard to the condition of trade unions in this country versus the trade unions across the salt water.

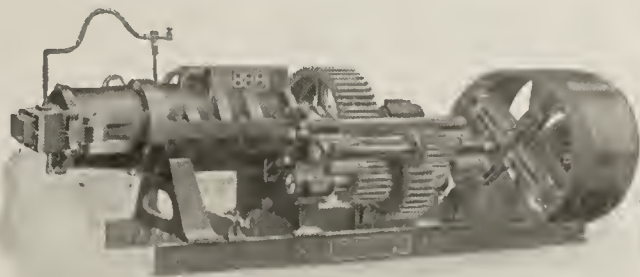
Twenty-six years ago I abandoned my trade, and this meeting is the twenty-sixth I have visited. I served my apprenticeship in Scotland seven years and six months; the six months was because I ran away three months and they added that to the seven years that I was to serve as a penalty, and I had to serve the six months longer.

After my apprenticeship was served I became a member of a trade union in Scotland and it was necessary for me to get the endorsement of three of the leading tradesmen in the shop where I served my apprenticeship that I was equal to the occasion, that I was a full-fledged mechanic. They put down their names that I was a mechanic and was capable of meeting any test, that I was at the top of the tree as far as skill was concerned. If I could not have done that I would not have the endorsement of the three mechanics, but I did and I got in.

Now, then, I came to this country very shortly after that and I found the conditions here very different; I found that instead of the best mechanics managing the affairs of the union, that it was the shysters that were running the roost; it was the men who could not do a good day's work at all who were at the head of things. I took great delight in calling them down at the meetings, because I became a member of the union here, and I remained a member until I became a foreman. As I say, shortly after I came over here, I became a member of the trade union and I know the conditions that exist. I wish you could see something of the conditions of the trade unions over in the old country. I think it would be a good thing for us if we could have some of the good things here that they have on the other side. It is the good men that predominate over there; it is the shysters who predominate here. Perhaps you don't know that fact, but that has been my experience.

Takes Canada Into N. B. M. A. Fold.

CHARLES J. DECKMAN: Mr. Chairman, I appre-



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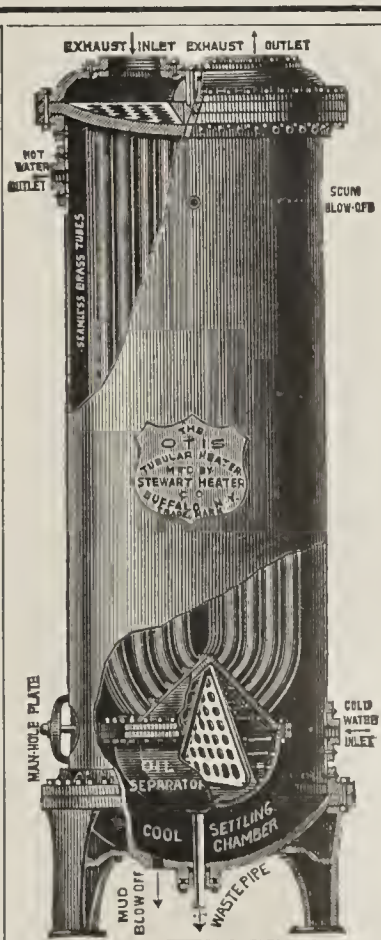
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ciate the good results that are likely to come from an extended argument, or discussion, of this question, but the time for this convention at this time is growing very short.

I have a little matter that I think it is important for us to take up, and, with your permission, I will introduce the following resolution:

"In view of the fact that we have state vice-presidents of this association, and in further view of the fact that no part of this vast universe has such energetic, enthusiastic and helpful membership as has our good neighbor, the Dominion of Canada, at this convention;

"Therefore, Be It Resolved, that the Province of Ontario, Canada, be recognized in the same relation to our association as the states, and that Charles A. Millar be, and he is hereby delegated as the Vice-president of this association for the Province of Ontario." I move the adoption of this resolution.

PRESIDENT ROGERS: The question is on the adoption of this resolution.

(Said resolution was duly seconded and **unanimously** carried.)

SECRETARY RANDALL: I am requested to announce on behalf of the Chicago Clay Club that there will be a special excursion this afternoon to the Coliseum, and it is hoped that every one here will go out there this afternoon at four o'clock. There are some special features to be introduced out there this afternoon, and it is the intention of the Clay Club to have automobiles for the purpose of taking you out there; but those of you, who are not accustomed to riding in automobiles, fearing that they will injure themselves, may take street cars. You don't have to take the automobiles; but they will have automobiles here for those of you who wish to use them. They will leave the Annex Hotel this afternoon at 4 o'clock, and any of you who wish to go, the automobiles will be there for you to use. They will be for the use of the members, and visitors attending this convention.

CHARLES J. DECKMAN: My attention is called to the fact that there are numerous other representatives of other provinces of Canada, and I believe that in fairness and justice to them that the resolution I introduced should be revised so as to take in the provinces of Saskatchewan, Manitoba and Quebec, and that names be provided and added to the list as vice-presidents from those three provinces; and I move the adoption of that amendment.

ANTHONY ITTNER: Mr. President, I hope that that amendment will be adopted. I have a nephew in business at Saskatchewan, and he attended our last convention in this city, and I know that he would feel complimented by the passage of such a resolution.

PRESIDENT ROGERS: You have heard the motion, is there a second?

ANTHONY ITTNER: I second it.

PRESIDENT ROGERS: This is after the adoption of the amendment to the original resolution.

(Said amendment was unanimously carried.)

PRESIDENT ROGERS: If the gentlemen will be seated, we want to get through with this session just as soon as possible; we will not keep you here any longer than is necessary.

SECRETARY RANDALL: The next number will be "The Business Man and the Trend of Modern Legislation," by A. D. R. Johnson, of Raleigh, N. C.

(The continuation of this report will be printed in the April 15 issue of "Brick and Clay Record.")

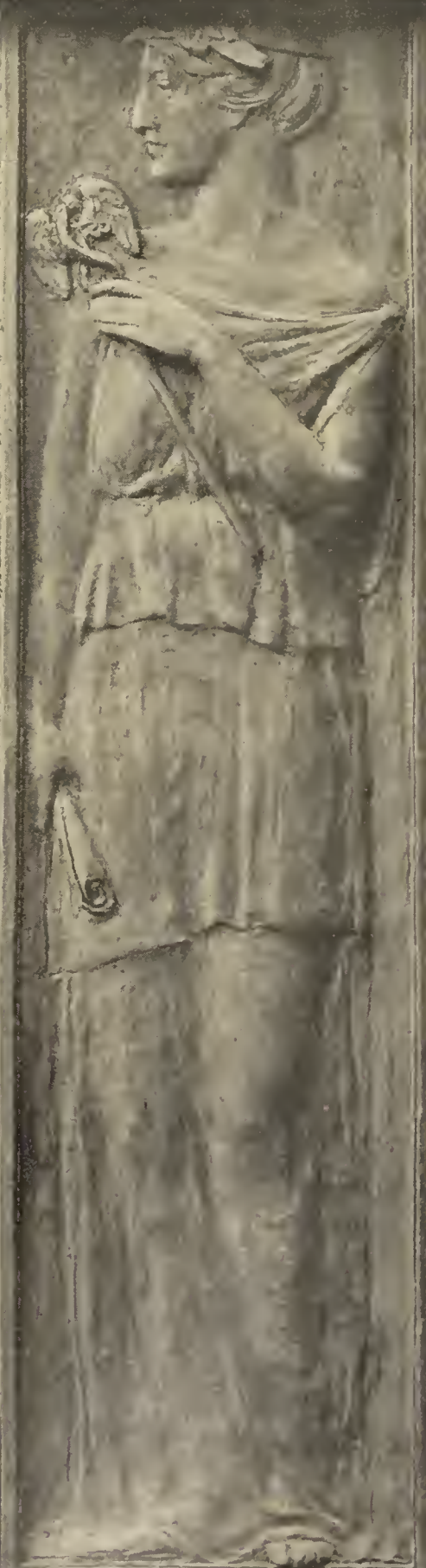
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CHAS. J. DECKMAN

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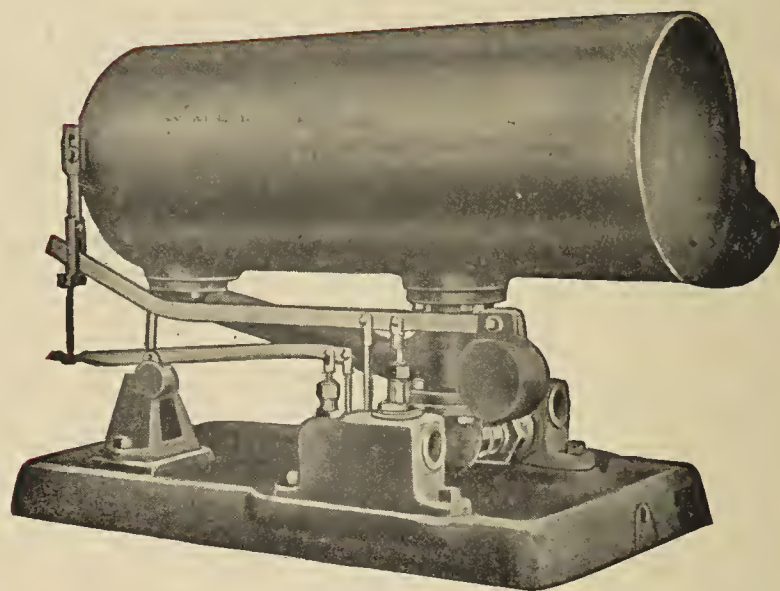
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Volume XLII

CHICAGO, APRIL 15, 1913

Number 8

A SEMI-MONTHLY RECORD OF THE WORLD'S PROGRESS IN CLAYWORKING

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Third Term President of the N. P. B. M. A.

Charles J. Deckman

Vice-President and Secretary Deckman-Duty Brick Co., Cleveland, O.



SETTING the pace of progressiveness for all other branches of the clayworking industry, trying new methods when old ways proved weak and futile, blazing new trails when old roads led to the Never-Never land, but holding fast to what had proven best in the past and hard to improve on in the future—the National Paving Brick Manufacturers' Association elected Charles J. Deckman, of Cleveland, Ohio, its presiding officer for his third consecutive term at the recent Chicago convention.

Having been a member of the Board of Directors of the N. P. B. M. A. from the date of its organization, Mr. Deckman is familiar with every hope and every promise of association work, and knows, from experience, the failures that have paved the way to success, and the disappointments that were forerunners of triumphant achievement.

The policies he outlined in 1911, when he first accepted the presidency, have been carried as near to completion as time would allow. The year 1913 will bring far greater results—results that will benefit not only the paving brick industry, but every other line of clayworking. In marked recognition of this general benefit, came his election to the third vice-presidency of the National Brick Manufacturers' Association at its 1913 convention in Chicago.

Mr. Deckman is now 52 years of age and, as he has been identified with the manufacture and sale of paving brick since 1887, can truthfully say that he has spent half of his life in the business. Twenty-six years of experience—the first five being spent in actual labor in every branch of clay manufacture except the mining of the clay.

Possessing a practical knowledge of road building and of the best known road building material, which would be impossible of attainment in any way other than long association and physical contact with the raw clay, the machinery and the fire, Mr. Deckman's advice is sought and taken at every point where past or future policies are in question.

In politics Mr. Deckman is still a Republican—in religion, a Presbyterian. He owns up to being a Past Commander of the Ohio Sons of Veterans, a Past Grand Chancellor of the Ohio Knights of Pythias, and one of the five Supreme Representatives in the Supreme Lodge, Knights of Pythias of the World. We know that he is a Thirty-second degree Mason and a Noble of the Mystic Shrine. What other fraternal bodies he holds membership in is hard to say—there is only one left-hand lapel to each man's coat.

The fraternal spirit shown by Mr. Deckman's memberships in various orders and the high regard he is held in by them, as evinced by the elective honors they have bestowed upon him, are reflected by his acceptance of the high office given him by his business associates in the N. P. B. M. A. To a man of Mr. Deckman's activity, no presidency could be perfunctory—particularly when it represented the firing line of the craft he had made his life work.

His past two years as president have brought home the mass of work, the burden of responsibility entailed by the office. It is, therefore, with full knowledge of the facts and a superb willingness to do the work and shoulder the burden that Mr. Deckman begins his third term as standard bearer of the paving brick industry.

And with a similarly perfect knowledge—bred of long association and actual physical contact with the raw material, the machinery and the fire of Mr. Deckman's personality—the N. P. B. M. A. showed that it could hold on to what had proven all wise in the past, when it induced Charles J. Deckman to take up, for a third term, the duties of its presidency.



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Number 8

In the Flood's Wake

Clay Plants Suffer Little in Water-Soaked Districts of Ohio and Indiana

BRICK AND CLAY RECORD FLOOD RELIEF FUND TOTALS \$3,056.05

With the receipt of the first news of the terrible disaster caused by the flood in Ohio, this journal immediately issued an appeal to its 7,000 readers, in the shape of a circular letter asking for contributions.

To date \$3,056.05 has been received, which amount has been forwarded to Governor Cox of Ohio. Additional sums are coming in daily, and every dollar received means that some destitute and homeless person is being aided in this their hour of suffering.

Elsewhere in these pages a list of contributors is published. Additional contributions received and not here noted will appear in the May 1st issue.

More than three thousand dollars is the sum to date sent to Governor Cox, of Ohio, from the "Brick and Clay Record" relief fund. This amount, added to the various sums contributed by those interested in the clay product industry and sent through other sources, brings the total sum up to an estimated \$10,000.

It is interesting to note that the "Brick and Clay Record" Relief Fund was contributed by 424 individual clayworkers and that each contribution came as a result of the appeal made through these columns and through circular letters sent by this journal to each of its 7,000 subscribers.

The money as received was dispatched daily to Governor Cox and every dollar has been or will be applied to relieve the suffering and the destitution wrought by the floods.

Contributions continue to be received and it is probable that many more hundreds of dollars will be given to this laudable cause.

The recent floods in Ohio and Indiana are estimated to have done more than \$350,000,000 damage to property, claimed a toll of 600 known dead, crippled business temporarily to an immeasurable extent and rendered homeless more than 200,000 persons.

It is gratifying to know, however, that despite the fact that Ohio is in the very heart of the clay product industry of the Nation and that the unbridled waters in that State covered the territory where the clay plants are the thickest, practically little or no damage was done to them.

It is also gratifying to know that while some of the largest manufacturers of clay machinery are located in the stricken districts that few really suffered more than the inconvenience of an interruption of shipping facilities until the railroads could repair the damage done to their tracks and bridges and restore traffic.

The Ohio disaster has brought in its wake some interesting studies as to the resistance of brick to flood, and its comparative value with concrete and other materials.

Over Dayton the frame houses were scattered helter-skelter, few indeed are those which have not been damaged so badly as to necessitate complete wreckage before re-construction. The brick-houses, on the other hand, held their own, even under most adverse circumstances.

The County Court-house, for example, in the very heart of the flooded district of Dayton, where the waters went well over the second story, held its own nicely, as the accompanying photograph attests, and, save for a much-needed washing, seems little different from what it was before.

Where the waters of the Big Miami came, in their sudden fury, wildest and angriest and lasted the longest, often an entire side almost would be eaten from the house-wall. Great gaping rents were exposed, and yet, far from crumbling for lack of this support, the brick above has held together well, and the houses are habitable, at least until the city begins to come to a normal condition.

So, again, with certain of the great factories. While

fire swept away many of the buildings which were not built of fireproofing material, the great chimneys, set up of brick, withstood not only the flames, but the wild wind that swept along.

One of the most convincing proofs of the durability of brick-paved streets comes from the flood. In Dayton, Miamisburg, Columbus, Zanesville and other cities where the waters were the highest, brick alone stood the rushing torrents and but for this fact the work of rescue in the early hours of the receding waters would have been retarded.

Where the broad asphalt highways, for which Dayton was renowned, were impassable to the automobiles of the rescuers, because the slabs of concrete had buckled, as it were, or burst, and been thrown helter-skelter, making of the street one jumbled rock pile, the brick streets—as attest the accompanying pictures—remained intact, and gave easy passage to vehicles bent on rescue work.

Flood Teaches Lesson of Brick.

One great lesson was taught by the unprecedented floods which swept the West Side of Columbus, Ohio. The flood, which was the worst in the history of the Buckeye capital, demolished more than 500 structures in the inundated section of the city, practically all of which were frame structures. In practically every case the brick structures withstood the ravages of the water, showing the greater security in times of flood to be gained from the brick over the wooden dwellings.

The inundated area comprised about 20 square miles and more than 25,000 people lived in that section. It was the residence of the laboring men and small-salaried people, generally, and as a result the majority of the dwellings were of frame. They were usually well-built but it mattered not how well-constructed they were, as the relentless waters washed them away and hundreds were demolished. Others which were left standing were badly damaged and it will require thousands of dollars to restore them and repair the damage.

Brick structures, as a rule, withstood the torrents in good shape. Outside of the windows in the lower floors which were washed out and some minor damages inflicted, they buffeted the currents and were the means of saving thousands of lives which would have been lost otherwise.

As shown in the accompanying pictures, the brick houses were the Gibaltars of the West Side. They were used as relief stations when the waters subsided and were the bright spots in the scene of desolation. The lesson to be taught will be accepted by thousands of small home owners in replacing dwellings on their lots.

Floods in the upper Ohio valley caused a loss to the pottery manufacturers of more than \$50,000 in damage to plants, and more than \$300,000 in wages to the employes. The flood in the East Liverpool district was just six inches less than that of 1907, and the 1907 flood was within eight inches of touching the high water mark of 1884.

Five potteries along the river in the East End of East Liverpool were flooded. The Thompson Pottery Co. and the Harker Pottery Co. were the heaviest losers. At the Harker plant, the flood entered the green room, floated all boards from the stilliards, and the green ware was upset into the muddy water. This was a complete loss, for the clay could not even be worked over again.

Nearly 50 tons of straw were caught in the flooded warehouses, and every bit of this had to be dumped over

the river bank. It cost less to buy new dry straw than to dry the wet bales.

In the Wellsville, O., district, the water was almost up to the second story in the McNicol-Corns pottery, this being caused from the back water.

The Wellsville China Co. also was a heavy loser as was the East Liverpool Potteries Co.

It will be some time before the plants along the river are operated to capacity, for it takes so long to clean the flood slime from the plants.

For once in the history of the clay industry in the Buckeye State, clay product plants generally suffered very little damage. Owners and managers of brick and tile concerns have learned their lessons from former floods and prepared for a recurrence of the high waters. In many instances work was not interrupted in the least.

This statement applies especially to plants manufacturing face bricks, paving blocks and pottery. Some of the common brick plants, however, were damaged, as their location usually is in the lowlands.

A canvass of the flood-ridden section of the state shows up extremely well for the foresight of managers of brick-making concerns. In some cases where their plants were exposed to danger from floods, levees have been constructed and they were effectively protected in that manner.

The Ironclay Brick Co., located at Shawnee, Ohio, which has offices in the Ruggery Building, Columbus, was not affected in the least and work went on as usual without interruption.

The plant of the Ohio Mining and Manufacturing Co., also located at Shawnee, was not touched and practically no damage was suffered.

The Cambria Clay Products Co., Blackford, Ohio, was not damaged in the least according to the statement of S. P. Reitz, secretary and treasurer.

Hydraulic Plants Escape Damage.

The Ohio division of the Hydraulic-Press Brick Co., located at Cleveland, was not damaged. The concern has two plants in the state, one at South Park and the other at Roseville. The South Park plant was fully protected by levees.

The McArthur Brick Co., of McArthur, Ohio, was not damaged, according to O. F. Pilcher, secretary.

The Shawnee Flash Brick Co., which operates a plant at Shawnee, was not damaged, like other concerns in that neighborhood.

The Straitsville Impervious Brick Co., of New Straitsville, Ohio, reports no damage to its extensive plant at that place.

The T. B. Townsend Brick & Contracting Co., of Zanesville, was not affected by the high waters which raged in that section of the state. This is true of other brick plants in Zanesville and vicinity.

The Everhard Company, of Massillon, Ohio, sustained no damage as the plant was at least 30 feet above high water mark.

The Oakland Pressed Brick Co., of Zanesville, reports no damage at the plant at that place, which has been idle for some time.

No damage was sustained by the Hanover Red Pressed Brick Co., which operates a plant at Hanover, Ohio, and which has offices in the Ruggery Building, Columbus.

Reports from the Logan Clay Products Co., of Logan, Ohio, show that the damage by the high waters at that place was slight.

The Nelsonville Brick Co., located at Nelsonville, Ohio, which was damaged several years ago by a flood, was



Fig. 1.—View in Columbus Ave., showing destruction to composition street paving. Note also brick residence standing and vacant lot where frame dwelling was located. Fig. 2.—Southwest corner of Broad St. and Avondale Ave., Columbus, showing good brick business block which withstood the attack of the worst of the flood. Note also the perfect condition of the brick pavement. Fig. 3.—View on Broad St. and Lorain Ave., Columbus, showing a row of brick flats still standing, while several acres of frame structures in the vacant space were swept away. The concrete street in the foreground speaks for itself. Fig. 4.—Old brick court house at Dayton, where flood was the deepest. Fig. 5.—In many places in the factory district of Dayton, nothing was left of the buildings, which were frame, except the brick stacks. These stood as a monument to Imperishable clay. Fig. 6.—This brick street in Dayton was in the very center of the heaviest flood district and is now in just as perfect condition as it was prior to the disaster. Fig. 7.—Southeast corner of Broad St. and Avondale Ave., Columbus, shows you that the force of the flood swept down large buildings. The structure in the foreground was a frame and crumpled like paper. Lang's Dye House supported by a brick building on the left was more fortunate. Note the perfect condition of the brick paved street. Fig. 8.—This view was taken in Chicago Ave., Columbus. The brick house on the left and the frame house on the right show for themselves.

protected by levees and the plant was not damaged in the least.

The Athens Brick Co., of Athens, Ohio, manufacturers of paving block, is another concern which was not damaged by the disastrous floods.

The brick plant of the Hocking Valley Products Co., located at Greenville, Ohio, was not touched in the least.

L. G. Kilbourne, president of the Columbus Brick & Terra Cotta Co., and also the newly elected head of the American Face Brick Association, reports no damage to his concern in the Hocking Valley.

The Claycraft Company, which operates a plant at Groveport, was above the high water.

One of the few plants in Ohio to suffer any damage was the Conard Brick Manufacturing Co., of Columbus, located along the Scioto river, south of Columbus. The plant was flooded to the depth of 10 or 12 feet and the damage is estimated at about \$5,000. It will require some time to get the plant in operation again.

Mulby Bros., which operated a common brick plant in Columbus, suffered no damage from the flood.

The plant of J. Kulp & Son in Columbus was another that escaped damage.

Word comes from the Delaware Clay Manufacturing

Co., of Delaware, Ohio, that no damage was done to the plant at that place.

The Westerville Tile and Brick Co., of Westerville, Ohio, also was fortunate and no damage is reported.

The Canal Winchester Brick & Tile Co., of Canal Winchester, Ohio, was located on high ground and the water did not reach it.

Reports from several plants located at Bellaire, Ohio, show that no damage of consequence was done at that place, although in the flooded district along the Ohio river.

The Harris Brick Co., of Zanesville, Ohio, reports no damage to its plant at that place.

R. T. Perry, of Leipsic, Ohio, manufacturer of sand mould brick and drain tile, suffered more from the wind storm than the floods and writes his loss will be heavy.

In the Hancock county, W. Va., district, bordering on the Ohio River, and across the river in Jefferson county, Ohio, considerable damage was wrought to brick and sewer pipe plants.

At Empire, O., only six dwellings were out of water during the flood. All of the plants of the Stratton Sewer Pipe Co. suffered more or less. The officials of the Union Sewer Pipe Co., in Empire, threw open the doors of

their plant, and the flood sufferers moved bedding there and for several nights sought refuge in the factory. More than 100 persons were provided with such accommodations.

At the Claymont brick plant in the New Cumberland district the loss was heavy, being estimated at this time at \$1,000 to property, and several times that amount to employees in wages.

The American Sewer Pipe Co. was probably the heaviest loser by the flood in this particular section, the losses being estimated at a total of \$7,000. The West Virginia Fire Clay Co. lost about \$600.

The plant of the General Electric Porcelain Co., in New Cumberland was flooded, its loss being placed at \$1,000.

All plants of the Mack Manufacturing Co., in the New Cumberland district were flooded. Losses have been estimated at between \$3,000 and \$5,000.

The Acme Fire Clay Co. was damaged, its loss being estimated at about \$700.

The plant of the Vulcan Brick Co., and the McLane plants in the Wellsville, Ohio, territory also were damaged by water, but the losses at these two works are very slight.

The Zanesville district was the worst sufferer. The American Encaustic Tile Works' entire plant was under two to four feet of water. The buildings were not damaged. The greatest loss was in materials and stock.

The Upjohn Pottery Co. was entirely swept away.

The Betterware Pottery Co. was under ten feet of water and the plant badly damaged.

The Roseville Pottery Co.'s main plant was under three to four feet of water. The damage was nominal.

The Roseville Pottery Putnam Plant was almost entirely submerged. The damage is unknown, but must be heavy to stock, materials and building.

The Mosaic Tile Co., J. B. Owens Tile Co., Zanesville Art Pottery Co., Brush-McCoy Pottery Co., Peters & Reed Pottery Co., and all the brick yards were above the flood and did not receive any damage.

Floods in Pennsylvania did considerable damage. The United Brick Co., of Conneautville, Pa., suffered heavily, and the only industry to be affected, at Harrisburg, Pa., was the plant of the Steelton and Harrisburg Brick Co.

In Indiana it was impossible to get accurate reports but it is not thought any very serious damage was done to any of the plants as the flooded area, with few exceptions, did not cover the territory where clay products were located.

The U. S. Brick Co., of Fall City, Ind., reported considerable damage and writes its plant will be closed at least three weeks.

The front end of the dwelling of N. Y. Spangler, of Chillicothe, O., was washed away but he reports no damage to his plant.

To show the spirit that prompted most of the contributions this letter from M. E. Howrey, of the Kingman Tile Works, Kingman, Ind., is given:

"Find enclosed \$1.00 for the flood victims. The high water did not do me any damage but the wind broke down my smoke stack and I had to buy a new one. My barn also was destroyed. I hope my little mite will do a little good. 'Brick and Clay Record' is the best clay journal it has been my lot to read. Success to you in your great work."

The machinery manufacturers were extremely fortunate. For several days it was believed that the C. W. Raymond Co., at Dayton, was badly crippled, but this uneasiness was caused by the inability to get in telegraphic or tel-

ephonic communication with the city and because of its isolation from the rest of the world.

In a letter under date of April 8 the Raymond Company wrote that it was unaffected by the flood as its plant was on high ground. The interrupted lighting and water power and railroad shipments necessitated a temporary shutdown but the plant is being run full capacity. Continuing, the letter says:

The great force of optimism is so thoroughly in the minds of the Dayton business men that today, less than two weeks from the flood, stores are assuming their normal attitude and about fifty per cent of the merchants in the flood district have started business. All that remains is to wash the mud off the front door.

The city of Dayton is so thoroughly saturated with optimism that every one, without exception, is boosting for a bigger, brighter and better Dayton and in less than ten days, if you happen to be in this section, you will find that Dayton is a very much alive member and is on the map and don't forget that everything goes for a bigger, brighter and better Dayton.

The Manufacturers' Equipment Co. alone suffered among the brick machinery manufacturers at Dayton. The office records were soaked by the floods and the waters caused considerable inconvenience in the plant proper. However, within a few days after the waters receded, the plant was placed in a condition for operation and is now, at this writing, running as if nothing had occurred to interrupt the every-day grind.

The following letter from the Chase Foundry & Mfg. Co., of Columbus, speaks for itself:

Fortunately we were located outside of the flooded district and were, therefore, not affected by this condition and are pleased to say that we are in a position to make our usual prompt deliveries and also have assurance from railroads leading into Columbus that they will be in a position to handle freight within the next 48 hours and trust our many friends and customers will remember us with their specifications.

The brick machinery plants in other parts of the State were not affected in the least.

BRICK AND CLAY RECORD'S OHIO RELIEF FUND

Brick and Clay Record:

For the stricken people of Ohio I want to thank you for your offering. We are touched not more by these substantial generosity than by the largeness of the hearts from whom they flow.

The elements have wrought us a staggering havoc. But this is a great State. She will recover. The lights of love and hope will point the way.

(Signed) JAMES M. COX,
Governor of Ohio.

The following amounts had been received and forwarded to Governor Cox, of Ohio, as contributions from readers of "Brick and Clay Record" to the suffering, destitute and homeless victims of the recent floods:

Brick & Clay Record, Chicago,	100.00	age, Ill.	5.00
Ancient Order of Chai- deans, Chicago	100.00	Thos. Jones, Macomb, Ill.	2.00
Hydraulic Press Brick Co., Chicago	50.00	G. E. Maeglin, Muscatine, Ia.	1.00
American Clay Machinery Co., Bucyrus, O.	100.00	Union Brick & Matl. Co., Cherryvale, Kas.	1.00
Geo. Ogan, Danville, Ill. ..	1.00	Frank E. Vanderhaden, Holton, Mich.	2.00
V. W. Aikley, Vinton, Ia. ..	1.00	Stief Bros. Carey, O.	5.00
Dysart Brick & Tile Co., Dysart, Ia.	5.00	Seward Brick Works, Sew- ard, Nebr.	2.00
Bonner & Marshall Co., Chicago, Ill.	5.00	Chas. Breisinger, Bucyrus, O.	1.00
C. H. Newby, Lynnville, Ia. ..	1.00	F. A. Dickinson, Tipton, Ind.	1.00
W. E. Lyon & Co., Carth-		Thornton Bros. Brick Co.,	

Rudyard, Mich.	1.00	Mrs. B. Erdahl, Thorsby, Ala. ....	.50	Morgan Willhite	1.00	N. Morrill	1.00
Mamer Bros., Campus, Ill.	5.00	Employees C. W. Ketcham Terra Cotta Works, Crum Lynne, Pa.	22.50	Frank Gruber	1.00	H. Sheasby	2.00
Costen, Moore & Co., McKenzle, Tenn.	4.00	I. S. Winter & Sons, Wadsworth, Ill.	5.00	Ernest League	1.00	Pioneer Realty Co.	2.00
Miss Clara F. Meler, St. Anne, Ill.	2.50	P. E. Fitzgerald, Watson-town, Pa.	1.00	Louis Godolia	1.00	Merchants Bank of Canada, per Mr. Murdoch.	5.00
St. Anne Brick & Tile Co., St. Anne, Ill.	10.00	Mr. Frank L. Thomas, Bremen, Ind.	1.00	Mantini Vergilio ....	.50	T. Cox	2.00
Munson Bros. & Co., Capron, Ill.	1.00	O. A. Burdick, Brantford, N. D.	2.00	James Reed ....	.50	Employees of E. C. Deacon, Lynchburg, Va.:	\$ 2.00
Jacob Melly & Bros. Red Bud, Ill.	1.00	J. J. Sabin, Fort Smith, Ark.	1.00	Ben Gausman	1.00	E. C. Deacon ....	.50
Wm. Beutler, St. Cloud, Minn. ....	.50	Employees Thornton Fire Brick Co., Thornton, W. Va.	25.00	S. F. Goff ....	.50	G. C. Smith ....	.50
Tennessee Brick & Tile Co., Dyersburg, Tenn.	10.00	Coffeyville Shale Brick Co., Coffeyville, Kas.	10.00	A. O. Kunston ....	.50	N. E. Deacon ....	.50
P. W. Hearn, Webster City, Ia.	1.00	S. M. Gould, Wellston, Mo.	5.00	N. L. Saunders ....	.50	Mrs. E. C. Deacon ....	.25
Jas. R. Gilchrist, Lowells-ville, O.	2.00	Chapman Brick Co., East Toronto, Canada	5.00	Bert Parsons ....	.50	Felix Deacon ....	.25
Haeger Brick & Tile Co., Elgin, Ill.	10.00	H. E. Buck Brick Mfg. Co., Lake Charles, La.	10.00	Paul Rothe	1.00	E. C. Deacon, Jr. ....	.25
Stukee Bros., Geneseo, Ill.	2.00	Hamilton & Toronto Sewer Pipe Co., Ltd., Hamilton, Ont., Canada	100.00	Matt Couch	1.00	Christine Deacon ....	.25
J. M. Powell, Brooklyn, Ind.	5.00	Employees of Hamilton & Toronto S. P. Co., Hamilton, Ont.	30.00	C. M. Harris	1.00	Lawrence Deacon	1.00
The Park Brick Co., Hartford, Conn.	5.00	Geo. W. Camp, Eldorado, Ill.	2.00	Earl Burr	1.00	E. M. Deacon	1.00
J. F. Sherbain, Wayne, Nebr.	2.00	Rapp Bros., Tile Dept., Morton, Ill.	5.00	Perry Fillmore	1.00	Hands on Plant	4.00
J. P. Ryan, Pottsville, Pa.	1.00	Drury Brick & Tile Co., Essex Junction, Vt.	10.00	J. E. Langdon	1.00	Employees Yard No. 11, Hydraulic Press Brick Co., St. Louis, Mo.:	\$ 1.00
Dennis Stapleton, What Cheer, Ia.	1.00	Iowa Pipe & Tile Co., Des Moines, Ia.	25.00	A. Cestini	1.00	Phil Krueger	1.00
L. G. Rose, Minneapolis, Minn.	1.00	New Ulm Brick & Tile Yards, New Ulm, Minn.	1.00	Domenico Alice	1.00	R. Wilson	1.00
Mrs. M. Brandenburg, Chicago, Ill.	1.00	E. Jasperson, Kingsville, Ont.	1.00	A. Torio	1.00	L. Quinn ....	.25
C. R. Lacey, Chicago, Ill.	1.00	W. J. Elliott, Dickinson, N. D.	5.00	Grove Foster ....	.50	W. M. Read	1.00
O. M. Platt, Chicago, Ill.	1.00	Eureka Brick Co., Norfolk, Va.	10.00	Sunset Brick & Tile Co., Gonzales, Tex.	5.00	M. Lenox	1.00
Ky. Construction & Imp. Co., Mayfield, Ky.	50.00	Bessemer Fire Brick Co., Birmingham, Ala.	10.00	Bickerstaff Brick Co., Columbus, Ga.	10.00	Tony Latiske ....	.25
A. F. Smith Co., New Brighton, Pa.	11.25	Z. P. Willis, Mt. Vernon, Ind.	1.00	Potlatch Brick Co., Potlatch, Idaho	3.00	Mike Vian ....	.25
Oscar Frazee, Moweaqua, Ill.	1.00	R. B. Small Co., Columbus, Ga.	5.00	Fred H. Worley, Buda Brick & Tile Yds., Buda, Ill.	1.00	Chas. Parino ....	.25
Consolidated Elec. & Mfg. Co., Assumption, Ill.	2.00	W. A. Wiethoff, Burlington, N. D.	1.00	J. B. Davis, Buda, Ill. ....	.50	Joe Stevens ....	.25
James Day, Saginaw, W. S., Mich.	10.00	Geo. S. Pettengill, Lewiston, Me.	2.00	W. E. Green, Buda, Ill. ....	.50	Chas. Columbo ....	.25
R. F. Lewis, Kenmare, N. D.	1.00	Vermont Brick Co., Putney, Vt.	2.00	C. W. Redebaugh, Buda, Ill. ....	.50	L. Matrisi ....	.25
Davenport Brick & Tile Co., Davenport, Ia.	1.00	Borden Brick & Tile Co., Goldsboro, N. C.	5.00	M. E. Howrey, Kingman, Ind.	1.00	W. Edwards ....	.10
Harry E. Kennedy, Mount Olive, Ill.	1.00	J. Gowanlock, W. Fort William, Ont.	5.00	S. E. Isgett, Gilbert, La.	1.00	Frank Rumel ....	.25
George Ogan, Danville, Ill.	1.00	Saco Brick Co., Biddeford, Me.	5.00	Hoytville Tile Co., Hoytville, O.	5.00	Bob Aldrich ....	.25
V. W. Akley, Vinton, Ia.	1.00	National Drain Tile Co., Summitville, Ind.	5.00	East End Brick Co., Louisville, Ky.	10.00	Bud Johnson ....	.10
Dysart Brick & Tile Co., Dysart, Ia.	5.00	Hellman Bros., Tiffin, O.	2.00	J. F. Garrett, North Yakima, Wash.	2.00	Peter Perry	1.00
Bonner & Marshall Co., Chicago, Ill.	5.00	Bunte Bros., Flat Rock, Mich.	1.00	Parks & Jeffreys, Graham, N. C.	5.00	Fred Perry ....	.20
C. H. Newby, Lynnvile, Ia.	1.00	G. W. Shaffer, Spencerville, O. ....	.50	Calhoun Brick Co., Atlanta, Ga.	5.00	Tom Lynch ....	.10
W. E. Lyon & Co., Carthage, Ill.	5.00	J. B. Allen, Oliver Springs, Tenn.	1.00	South River Brick Co., Atlanta, Ga.	5.00	Joe Chandler ....	.10
Thos. Jones, Macomb, Ill.	2.00	North Alabama Brick Co., New Decatur, Ala.	5.00	John H. McKenzie, Atlanta, Ga.	5.00	Geo. Swamy ....	.25
G. E. Maeglin, Muscatine, Ia.	1.00	C. E. Graham, Lake View, O.	2.00	Lincoln S. Morrison, Atlanta, Ga.	2.50	Joe Barra ....	.10
Hedrick Tile Works, Hedrick, Ia.	2.00	Thos. J. Smedley, Paris, Idaho	3.00	W. A. Owen, Atlanta, Ga.	2.50	Jake Steffan ....	.10
Harry R. Rupp, Egg Harbor City, N. J.	1.00	Adam Baab, Canal Dover, O.	1.00	H. N. McAfee, Atlanta, Ga.	1.00	Ed Lewis ....	.10
Mrs. Jos. Riehle, Auburn, Ill.	2.00	Jos. Soisson Fire Brick Co., Connellsville, Pa.	50.00	H. T. Rawlings, Atlanta, Ga. ....	.50	Peter Columbo ....	.15
W. C. Pratt, Augusta, Ark.	1.00	J. T. Davle Brick Co., Spokane, Wash.	5.00	Friends, Atlanta, Ga. ....	.75	Carl Calcatara ....	.15
C. N. Dollison, Augusta, Ark. ....	.25	Employees J. S. Haggerty, Dearborn, Mich.	67.50	Kentucky Construction & Imp. Co., Mayfield, Ky.	50.00	Tom Hancock ....	.50
H. R. Klope, Augusta, Ark. ....	.25	C. E. Williams Brick Co., San Antonio, Tex.	5.00	Platt Bros., S. Jacksonville, Fla.	2.00	C. W. Chandler ....	.25
Geo. J. Fleckenstein, Anna, O.	1.00	Lewis Minor, Birmingham, Ala.	5.00	Isaac Parker, Jr., Saginaw, W. S., Mich.	1.00	Fred Gahr ....	.25
E. S. Kuenzli, Nevada, O.	1.00	Geo. Olton, West Toronto, Ont.	1.00	Wm. H. Fenton, Martins Ferry, O.	1.00	John F. Barrett	1.00
J. M. Creswell, Milan, Tenn.	1.00	John Price, Toronto, Ont.	10.00	J. R. White, Webster City, Ia.	2.00	P. S. Trowbridge	1.00
E. K. Phillips, Springfield, Mass.	10.00	M. C. Thayer, New Cumberland, W. Va.	1.00	Finzer Bros. Clay Co., Sugar-creek, O.	1.00	Jim Juliana ....	.25
Burton F. Bowler, Canada Brick Co., Montreal, Can.	6.75	W. C. Daniels, Guilford College, N. C.	1.00	Dietrich & Bentin, Dubuque, Ia.	1.00	Chas. Vago ....	.25
Martin Tychsen, Bradford, Ill.	1.00	John J. Daniels, Guilford College, N. C.	1.00	Wm. N. Weir, Bruno, Sask., Canada	1.00	Citro Bassia ....	.25
G. E. & R. F. Sleg, Glendale, Mont.	2.00	J. D. Bobbitt, Madisonville, Ky.	2.00	R. Bushell, Stamford, Tex.	2.00	Billy Driscoll ....	.15
Port Dover Brick & Tile Co., Port Dover, Ont.	5.00	Brick Selling Co., Birmingham, Ala.	25.00	Nels Ostrum, Heron Lake, Minn.	1.00	Frank Capristan ....	.10
Hilfinger Bros., Hudson Falls, N. Y.	5.00	Breaux Bridge, Brick & Milling Co., Breaux Bridge, La.	1.10	Thos. Jones, Macomb, Ill.	2.00	Walker Wright ....	.20
John A. Goodwin, Philadelphia, Pa.	5.00	Pomona Terra Cotta Co., Pomona, N. C.	25.00	Redford Brick Works, Richmond, Va.	7.00	John Sappalo ....	.10
National Fire Proofing Co., Keyport, N. J.	5.00	J. L. Daniels, Pomona, N. C.	1.00	Julius Gobeaux, Everett, Wash.	1.00	Amos Aldrich ....	.25
Alwine Bros., New Oxford, Pa.	5.00	S. A. Williams, Omaha, Ga.	2.00	Acme Brick Co., Cayuga, Ind.	25.00	John Ducher ....	.10
Frank Dautremont, Monticello, Ia.	5.00	E. H. Richardson, San Mateo, Cal.	2.00	Employees Architectural Tile & Faience Co., Maurer, N. J.	2.00	Henry Calcatara ....	.10
L. A. Harding, Carrollton, Mo.	5.00	Lancaster Brick Co., Lancaster, N. H.	2.00	Diehl Brick & Tile Co., Defiance, O.	1.00	Chas. Calcatara ....	.10
A. W. O'Harra, Carthage, Ill.	5.00	Barren Red Pressed Brick Co., Barren, Wis.	1.00	H. L. Cartzadner, Den-bigh, N. D.	1.00	Carl Bruno ....	.10
J. N. Silva, Pueblo, Colo.	1.00	A. Wadell, Wolf, O.	1.00	Corvallis Brick & Tile Works, Corvallis, Ore.	2.00	Ed. Coleman ....	.10
J. M. Ireland, Las Vegas, N. M.	4.50	Employees of American Fire Brick Co., Mica, Wash., as follows:	2.00	S. A. Palmer, Marletta, O.	2.00	S. Sapello ....	.10
Bullders' Brick Mfg. Co., Hooper, Nebr.	15.00	Thos. Ruston	2.00	Employees and friends of Redcliff Clay Products Co., Redcliff, Alta, Canada, as follows:		S. J. Sanders, Sec. Che-halis Brick & Tile Co., Chehalis, Wash.	5.00
Excelsior Brick Co., Menominee, Wis.	2.00	Theo. Tally	1.00	Myron Landis	1.00	Tom Brown, Sumas, Wash.	2.00
Lofland Brick Co., Milton, Del.	10.00			Chas. Oakland	5.00	G. W. Shaffer, Spencer-ville, O.	1.00
Francis O. French, Catskill, N. Y.	1.00			A. Oakland	2.00	Watson - Fitzgerald Corp., Danville, Va.	1.00
Monroe Tile Co., Monroe, Ind.	2.00			R. Chapman	1.00	B. C. Pottery Co., Ltd., Victoria, Canada	5.00
Miss Caroline Skiness, Thorsby, Ala.	1.00			R. Reem	1.00	Frank McIlvane, Pitts-burgh, Pa.	1.00
Mrs. E. N. Dryhood, Thorsby, Ala.	1.00			J. Jones	1.00	Employees of Builders' Brick Co., Seattle, Wash.:	\$ 1.00
Miss Clara Soberg, Thorsby, Ala. ....	.50			C. Newnham	1.00	Frank Houlahan	1.00
				H. H. Freeman	1.00	Ben Atkinson	1.00
				P. Armentrout	1.00	N. Martineau	1.00
				A. J. Learmouth	2.00	Cash ....	.50
				G. Baird	1.00	C. C. Jones	1.00
				G. Thomson	1.00	Carl Nelson	1.00
				J. Hughes	1.00	A. Girolo	1.00
				J. Klitchen	1.00	J. C. Bell	1.00
				A. Fahgreave	1.00	J. Lombardini ....	.25
				H. Lawton	2.00	J. Bogni ....	.50
				J. Steff	1.00	J. B. Campbell ....	.50
				J. C. Hammond	1.00	L. Lombardini ....	.50
				R. S. Hodge	2.00	B. Lombardini ....	.50
				E. N. Ardinger	2.00	J. Ververdere ....	.50
				W. Price	1.00	G. Lombardini ....	.50
				R. Cook	1.00	W. T. Houlahan	2.50
				F. Broughton	2.00	C. Erickson ....	.50
				C. W. White	2.00	F. Schmidt	1.00
						A. Houlahan	1.00
						J. Aumann	1.00
						Employees A. F. Smith Co., New Brighton, Pa.:	
						Mont. Hays ....	.50
						Eddie Rank ....	.50
						Geo. Cross ....	.50
						J. W. Anderson ....	.50
						J. J. Johnson ....	.50
						W. E. Dever ....	.50
						Homer Dixon ....	.50
						Chas. Cater	1.00
						T. B. Barrett	1.00
						J. V. Barrett ....	.50
						Charles Allison ....	.25
						Albert Dixon ....	.25
						Charles Gibson ....	.25
						Wm. Dixon ....	.50
						Andy Haylee ....	.50
						Clarence Barrett	1.00
						Geo. Hays ....	.50
						Louis A. Smith	1.00
						The A. F. Smith Co.	1.00
						Employees Golden - Fairview Pr. Brick & Fire Clay Co., Golden, Colo.:	

(Continued on page 621.)



"Two or three tumbled down frame structures stood as a monument to the pioneer days of Ohio."

How Cox Got Into the Game

BEING THE STORY OF A YOUNG MAN WHO FELL HEIR TO A RUN-DOWN CLAY PLANT

By Iverson C. Wells

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CAN a man who does not know a brickyard from a marble yard successfully conduct a clay plant and sell his product in the face of strong competition?

The average clayworker, who has spent the best of his life in mastering the business, as has his father and his grandfather before him, is apt to answer in the negative.

The average salesman, with the average amount of common sense, who has mastered the science of selling, whether in cold-storage eggs or harness leather, is very apt to reply in the affirmative.

As I happen to be in the latter class and as I also happen to have had the opportunity to prove the point, I go on record with the affirmatives.

Until five years ago I was an insurance salesman. Today I am the sole proprietor of one of the best paying clay plants in Ohio. The story of how I did it may not only prove interesting but also may open up a considerable alleyway for reflection.

It was in the last week of December, 1908, that I found myself out in Iowa struggling to close up three good prospects in an effort to win the coveted prize of \$1,000 for the best record of the year our company had offered its agents.

The three years I was in the insurance field were profitable for me and I take considerable pride in the thought that I was reckoned as one of the most productive agents in the Central West.

There was a reason for this, too. I considered selling life insurance a business and I studied the business. I learned everything there was to learn about my company. I analyzed the game from "A" to "Z" and I had every talking point at my tongue's tip before I attempted to approach a prospect.

My course of action was not a haphazard one. I worked out a system and I stuck to that system until I found reason to know it was wrong. Whatever defects there was in that system I corrected and I started over again.

I made mistakes, of course. But as I grew more experienced and developed a confidence in myself those mistakes became less frequent.

Well, the last few days of December, found me nearing my goal. My monthly premium reports showed that I was far ahead of any agent's previous record. With three working days left in which to clinch the prize bonus, I redoubled my efforts. I had in view two good prospects. They were "warmed up" to my proposition and I was hugging close to keep them from "getting cold."

It was in the afternoon of the 28th I left my hotel to keep an appointment with Royston, the banker, who was considering a \$50,000 policy on the twenty-payment plan. I had just stepped out the door when the clerk gave me a telegram. I opened it as I hurried to keep my appointment.

Grandfather Cox died this morning. Shall we delay funeral until your arrival?

If I had been hit on the back of the neck with an ice bag I could not have been more jarred than I was by this message. It is true the last few letters from mother had told of Grandfather's indisposition but the possibility of death never entered my head. Somehow, despite the fact that Grandfather was far beyond the three-score and ten allotted to man, I had looked upon his existence as one of perpetuity—a way most of us consider life I guess, until the Almighty awakens us to the grim realization that the span is, after all, brief.

My impulse was to rush to the telegraph office and wire that I would take the first train back home. Whether it was because I was the only grandchild or because the recklessness of my early life had elicited his sympathy, or both, Grandfather always had evidenced an unusual interest in me and I felt that it was nothing more than right that I should at least pay this tribute to his affection by attending the funeral.

At the door of the telegraph office I paused as I heard the clock in the court house tower nearby toll off the hour of 3, the harsh tones of the bell recalling my appointment with the banker.

How often are we called upon to choose between duty or sentiment and self-interest?

The trip back to Ohio meant at least a week. Three days just now might mean the winning or the losing of the prize for which I had struggled so hard during the year.

The pendulum swung to and fro between sentiment and self-interest. What good could I do even if I should attend the funeral, I argued. Then I thought of the gray-haired old man who lay in his shroud back in the little town in Northern Ohio, and as I thought of the many little acts of unselfishness with which his life was filled the tears welled up in my eyes.

FATE DECIDES AND COX ACCEPTS ITS CHOICE

Sentiment won. I turned to enter the telegraph office and ran pell mell into Royston, the banker.

"Hello," he cried, cheerily, as he held out his hand. "I was just on the way to the hotel to see you. Got to leave town at 5 o'clock and thought I would let you close up that little matter for me."

As he took hold of my arm to lead me to his office a few doors away he observed by hesitation and looked at me with just a shadow of surprise flitting across his face.

That glance determined my course. Forcing a smile I swung about and we entered his office.

An hour later I left Royston with his application tucked in my pocket. Two days later I did likewise with the application of the other prospect and next day hurried to the Chicago office, where the superintendent wired me I had won the coveted prize.

I found a letter from mother on my arrival in Chicago advising me to come home at my earliest convenience as Grandfather's will was to be probated and I not only had been made administrator, but also sole beneficiary.

Despite the mournful tone of the letter I could not keep back a smile when I read the last clause, for I knew that Grandfather's estate consisted of only the little homestead and an antiquated brickyard which had not been run for several years because of his inability to make it profitable, and that, whatever of the world's fortune he had gathered during his earlier and more prosperous years

had been sunk in an effort to rehabilitate the plant and rework the exhausted clay bank.

My strenuous efforts of the past year merited a rest and I decided to take a two-weeks' vacation and visit the scenes of my youth.

Two days later when I boarded a train for Mauryville, Ohio, I had my plans formulated. I would sell off the property into city lots, wind up the estate, bring mother back to Chicago, buy a small and inexpensive home in the suburbs and settle down to a homelife I had dreamed of since attaining my majority but which until now, I never had the opportunity to enjoy.

It was several weeks before the red tape of the courts placed me in possession of the property, but in that time I got the opportunity to become pretty well acquainted with the way lawyers handle an inexperienced young man.

COX GOES OUT TO LOOK AT THE FAMILY ESTATE

One morning I went out to look at my "estate." It consisted mostly of abandoned clay pits which had been worked during the fifty years Grandfather had run the Mauryville Brick and Tile Plant. My plan to cut the property up into city lots faded away when I saw those great water-filled excavations. If Mauryville had been Venice perhaps I would have a chance.

I turned my attention to the plant itself with more confidence. I could at least sell the machinery to someone. Two or three tumbled-down frame structures that stood as a monument to the pioneer days of Ohio nestled in the low land at the East end of the property.

Old "Bob" Sawyer acted as my guide about the property that morning and I could not have chosen a better conductor for he had been general utility man about the yard, acting as superintendent and chief burner until eight years before when the plant was closed down as a tribute to modern methods and competition.

As we neared the plant I saw some signs of recent activity about the yards and expressed interest in this to Sawyer.

"Just before Mr. Cox took sick," he explained, "he got the notion into his head to start up the plant again. I tried to talk him out of it, but he was set on it. I got the machine in pretty fair shape but it saw its best day ten years ago. It was just like the crazy notion of a man with one foot in his grave and we humored him."

I did not know a brick machine from a buzz saw, but it was evident even to me that it would take a miracle performer to do much with the outfit before me. I have never seen such utter desolation except in the pictures of some ancient ruins.

Once I had heard Grandfather say that a good deposit of clay was about half the value of a clay plant so I took fresh hope as I surveyed the twenty-five acres.

"How's the clay—pretty fair?" I asked in a careless way, not wishing to show too much interest or ignorance.

Sawyer observed my glance over the abandoned clay pits.

"There's a little strip over yonder," he replied after a pause and pointed to a small pit some distance away. "That's all there's left and it wouldn't last six months. This land has been worked nigh onto fifty years and what'd make brick has been taken out of it long ago."

Plan No. 2 faded away as I felt the full import of Old Sawyer's words. No one would buy a plant that would not make brick nor a clay pit that had no clay in it.

I can sell anything that can be sold, but whatever I

sell must have at least a semblance of merit to it, for I am not in the confidence game business, and I do not believe I ever will be tempted to go into it.

As I turned to go back to the little house across the road it was with a somewhat positive conclusion that I had some dead weight to carry.

"My advice is not to sink any money in this place," said Sawyer as we walked along. "That is, if you have any idea of doing it."

His advice was unnecessary. The idea of attempting to get the place into working condition was far from my thoughts. Possibly I could turn the pits into fishponds. This and half a dozen other suggestions came to mind until I drifted into a maze of vague possibilities that was fast turning my otherwise calculative mind into a veritable charnel house of day dreams.

SAWYER EXPRESSES HIMSELF ON THE COLLEGE-BRED YOUTH

"Good day, Mr. Sawyer."

I looked up as a young man, scarcely in the twenties passed us and saluted Old Sawyer cheerfully.

"Who's your young friend?" I inquired as the youth trudged along ahead. Sawyer glanced back before he answered, and I thought I saw his brow cloud just a little.

"Old Widow Simpson's son," finally answered Sawyer. "Just got back from the State Ceramic school and imagines he knows all about the brick game. It does beat the mischief how these young upstarts nowadays can go away and cram a few books down their craws and imagine they know more than a fellow who has spent his life in the school of experience."

Evidently Sawyer did not have much confidence in the college-educated youth of the present day. To divert my mind from the perplexing problem of the morning I amused myself by drawing out the old brickmaker.

"You must give the college youth credit for having had the advantage of learning all the short cuts and improved methods," I suggested.

"Short-cuts, nothing!" exclaimed Sawyer with some exasperation. "The school of experience beats them all. These new-fangled ideas in school sound all right on paper but they don't work in the clay pit."

"Granting," I said, for the sake of argument, "that the school of experience is best, isn't it well to get the rudiments at college? It cuts off about twenty years of the course in Experience University, you know."

Old Sawyer stopped suddenly before me in the road and looked at me with a gleam in his eye.

"I'll take the good old way," he snapped and he left me standing in the road smiling at his undeniable dislike of the "new-fangled ideas of the college upstarts."

Mother was on the porch of the little frame house that had done duty as the domicile of the Cox's for two generations.

"You're just in time for dinner, son," she said, and the savory odors from the kitchen needed no second invitation.

That afternoon I found a shady spot on the east side of the house and gathering up a few magazines proceeded to devote the remainder of the day to selfish enjoyment.

Grandfather had selected an ideal spot for his home when he located on the site that afterwards became Mauryville. I had often heard him say that he chose it because the hills at the rear reminded him of his Virginia home which he left in the movement west shortly after the close of the Civil War.

The house was built on a small plot of ground, probably fifteen acres in area. I had had an idea that its chief claim for value was because it was just across the road from the clay plant which made it convenient for grandfather. Grandfather, however, had declared that the high bluff at the rear of the house acted as a break for the cold winter winds that swept across the plains and saved fuel.

My own impression of the bluff was that which had come down to me from my childhood days. Before my father died mother and I used to spend our summers at Grandfather's. I have a distinct recollection of sharing a toboggan slide over at one end with those neighboring children who courted my favor by contributions of a liberal portion of their sweetmeats.

I was dreamily contemplating the old toboggan slide when I observed a figure crawling up the side of the bluff. I watched it lazily for several minutes, but became curiously interested when I saw its owner was intent on some well-defined mission.

"That's Widow Simpson's son, Charlie," mother volunteered to explain as she came out in the yard. "He is back from school and spends most of his time digging around among the hills. Grandfather took quite an interest in him several weeks before he died. I am of the opinion that he could be using his time to better advantage, although he is a bright and manly young fellow and doesn't seem to be lazy."

"I'm going over and meet him," I said as I gathered up my unopened magazines and took them into the house.

I found young Simpson busy with a spade when I approached him, but he dropped his work and extended a strong hand to me in greeting.

"Good afternoon, sir," he said. "You are Mr. Alfred Cox I presume?"

I assured him his presumption was correct and looked inquiringly at the spade and uprooted soil. His glance followed mine.

SIMPSON SUFFERS KEEN DISAPPOINTMENT IN EXPERIMENT

"Suppose I ought to ask permission of you to work here, inasmuch as you are now the proprietor. Although I obtained permission from your grandfather I intended to speak to you about it at my first opportunity."

We found a comfortable ledge and sat down for a little chat. I found him just as mother said—a very bright and likeable young fellow. I talked to him about his school work and his ambitions.

"My father worked for your grandfather years ago," he explained, "and I kind o' grew up about the clay pits. I like the work and when I got old enough I enrolled under Prof. Orton in the ceramic department of the State University. I made up my mind if I went into the business I would go into it right and I expect to equip myself for it."

"You see I've taken three years of the course, but I came home when I heard your grandfather thought of opening up the old brickyard again. I knew he would give me a chance to work about the place even if it was just as a laborer. I need some practical experience and I considered it would be of considerable help to me in completing my last year at school."

Grandfather's death was a considerable disappointment to him no doubt but he was even more disappointed when I told him I had no idea of attempting to run the brickyard, myself.

"Well, the plant is a pretty old one at that and the clay banks are exhausted," he commented as his eyes looked wistfully across the way to water-filled pits. "I don't blame you, it would be throwing away money, unless you could uncover a new deposit."

I saw a bright light come into his grey eyes as his gaze rested on the spade at his feet, and he turned to me in undisguised eagerness.

"Would you try to work the plant if you knew you had some extra fine shale around here?" he asked.

I smiled as I thought of what Sawyer had told me.

"Why, there isn't enough left to make a carload of brick, Old Sawyer tells me," I replied, looking at the abandoned clay pits in disgust.

"Over there, perhaps not," quietly answered young Simpson. "Here, it may be different."

He stooped over and picked up a handful of soil he had loosened from an overhanging ledge. He thumbed it thoughtfully and then turned to me.

"I've been analyzing this with what few facilities I had at hand, Mr. Cox, and I firmly believe this is one of the best beds of shale in the State."

SAWYER TAKES EXCEPTION TO SIMPSON'S STATEMENT

I looked at the great bluff rather doubtfully and—

"You really think so?" I asked.

"Yes, and more than that—I know it. I told your grandfather about it and it was his intention to let me experiment with it. Of course, his illness and death stopped it."

I learned more about the various qualities of the different clays and shales in the next hour than I ever expect to learn in the same time again, for I have never met any one who seemed to know as much about the subject as he did. When I left Charlie Simpson an hour later I had made up my mind to let him have the opportunity to try whatever experiment he wished to make.

The next morning I went over to see Sawyer and talk over the idea with him. I asked him if he knew of the shale.

"I've lived in this neighborhood forty years," replied Sawyer with considerable warmth, "and if there's any clay that'll make brick, except in that little strip over there, then it's in a soap box and was carted here."

I suggested that possibly young Simpson had really discovered a new bed that was worth while trying out.

"In that bluff over there?" Sawyer pointed contemptuously in the direction of the house. "I haven't been round here for nothing. I know what's in that. There ain't nothing in there except soapstone. You can't use it in a machine—it won't work in the first place, and in the second place you can't dry it. You're wasting time thinking about it."

Despite old Sawyer's opinion I was inclined to believe that young Simpson knew what he was talking about, but I concluded to go rather slow. The more I thought about the matter, however, the more curious I got to know if young Simpson was right. I decided to satisfy my curiosity.

A few days later I told Simpson to go ahead. Sawyer plainly was disgusted and reluctantly agreed to assist in building a small test kiln out of one of the old vats around the yard. It was nearly fifteen days before we got the rusty-looking, old brick machine limbered up enough to make a few sample brick, and put in a small grinder which I got second-hand. Simpson worked like a Trojan, with Sawyer spending most of his time sneering at his labors.

We had to depend on the open yard drying, but fortunately the weather was in our favor. Finally the kiln was set and the fires started.

"Well, what's your opinion, Simpson?" I asked, as we saw the first column of smoke pour from the stack.

"Can't say, Mr. Cox, that I have any at all just now. We have been working under the most adverse conditions. First of all that shale should be weathered a little. Again, we had no adequate way to grind it, for it will take one of the modern dry pans or hammer crushers to handle that shale. I am hoping for the best, however."

Three very interested persons watched the opening of the kiln. Sawyer was the first to pull out a brick. He seized one eagerly, looked at it critically for a moment and threw it down contemptuously. There was a smile of derision on his face as he stepped back and watched Simpson pick up a brick.

For fully a minute the youth examined the brick, turning it first from one side to the other. He reached in and took out another and compared the two. A moment later he was eagerly drawing out others and comparing them with the first.

"Isn't this a beauty!" he finally exclaimed, holding up one of the brick.

I took the brick without comment and looked at it. My knowledge was rather limited. The brick I held in my hand was a golden yellow in color, but whether it was unusual or not I was unable to say.

"What do you think of it, Sawyer?" I asked.

"A hell of a color!" he grunted.

Simpson smiled but made no answer.

"Why, you couldn't give that brick away with gold dollars for prizes," added Sawyer.

Simpson ignored the remark if he noticed it and tapped one of the brick with a small hammer. It gave forth a ring as clear in tone as a bell. He looked at me for a moment before speaking.

"It's up to you, Mr. Cox," quietly said Simpson.

"In what way?" I asked.

"It's up to you to find a market."

Now, I never had the slightest idea of going into the brick business when I consented to the experiment. I was prompted chiefly by a desire to satisfy young Simpson's curiosity to try the old bluff as affording a suitable shale for brick purposes and I had a vague idea that possibly his success would give me a selling talk to get rid of the property.

That night I went over to see young Simpson and discuss the possibilities of the new clay bank. I wanted to get all the information possible to enable me to form some scheme to dispose of the property to the best advantage.

I found the youth very much enthused over the idea of utilizing the shale bed for manufacturing purposes.

"It would be a shame, Mr. Cox, to not work that shale bank," he pleaded.

"Do you think it is in sufficient quantities to warrant working?" I asked.

"That deposit runs clear back to the old river," he answered quietly. "I know because I have explored the entire property. I would say there is enough shale there to last a modern plant of the largest capacity for a hundred years."

"Back to the river!" I exclaimed. "Why, there is only about ten feet of that bluff on my property. The rest of it belongs to the Carpenter estate."

"You might lease it," suggested Simpson.

The continuation of this story will be found in the May 1st issue.

Woman Makes Brick

QUITS SOCIETY TO BECOME
HEAD OF BIG CLAY PLANT



THIS is an age of the successful advent of woman into business life. She has stepped triumphantly into many places of trust and responsibility which were formerly considered man's sole prerogative. The mentality of woman is today no longer undervalued. Feminine brains are indeed becoming more incisive and fertile as the demands of Big Business become importunate.

A striking instance of the executive and managerial aptitude of woman in modern business is to be found in the ranks of the clay-products manufacturing. At the



Mrs. Georgia A. Buckley, of the Buckley Brick & Tile Co., Montrose, Col. Only Woman Member of the Brick Manufacturers' Association.

recent clay show one of the conspicuous delegates to the convention was a western woman, the president of a brick-making concern at Montrose, Colo., who is one of the few woman brick-manufacturers in America:

She is Mrs. Georgiana Buckley, widow of the late Senator Buckley of Colorado. She is a woman of gentle breeding, queenly in personality and bearing. She is a thoroughly womanly woman who has developed no trace of masculinity in entering the tempestuous arena of modern business.

In another age this woman of striking personality would have been a Joan d'Arc—a Queen Isabelle—or an Elizabeth. She would have figured potently in the commercial and social development of the times.

Woman's imagination is her strongest psychological trait. With it she finds romance and beauty in even the

ordinary and humdrum things of life. In the case of Mrs. Buckley, her imagination enabled her to idealize even so prosaic a thing as brick. With her mind's eye she saw stately palaces which were built of brick, and she visioned redolent gardens with winding walks of brick whereon lovers strolled in silvery moonlight. She saw brick coming into its own—triumphant, victorious.

And so Mrs. Buckley, after the demise of her husband some eight years ago, decided that the social whirl should not be the sole end and aim of her life. She decided that a society woman can be useful as well as ornamental. Then it was that she threw herself heart and soul into the fascinating game of business—and she chose clay products.

Thus, concluding that she would let other women put the "sigh" in society, she built at Montrose, Colo., a brick-making plant, a well equipped and up-to-date structure, which cost many thousands of dollars. During the first two years the venture was anything but smooth sailing. She found that there were many difficulties to meet and overcome. There were foremen whom she had employed who proved themselves unfit and inefficient, and there were other men who caused her heavy financial loss.

But through it all, she has remained steadfast at the helm of her business, so that it might be steered clear of rocks and shoals. Today the Buckley industry shows every indication of still further progression and future development. The concern manufactures a full line of brick of excellent quality.

In the matter of personality, Mrs. Buckley is most interesting. She is tall and stately and her striking, queenly beauty would attract attention in any social gathering.

When asked her views on woman suffrage recently, Mrs. Buckley remarked that the principle involved was alright, but that the tactics pursued to attain realization of that principle were all wrong. The militant methods of the English suffragettes she avers are as detestable as they are unwomanly.

Mrs. Buckley was a regular attendant at all the business sessions of the N. B. M. A. convention and found much to interest her at the Clay Show. She said she came to Chicago for ideas and she got them.

IMPROVEMENT IN ROOFING TILE BUSINESS.

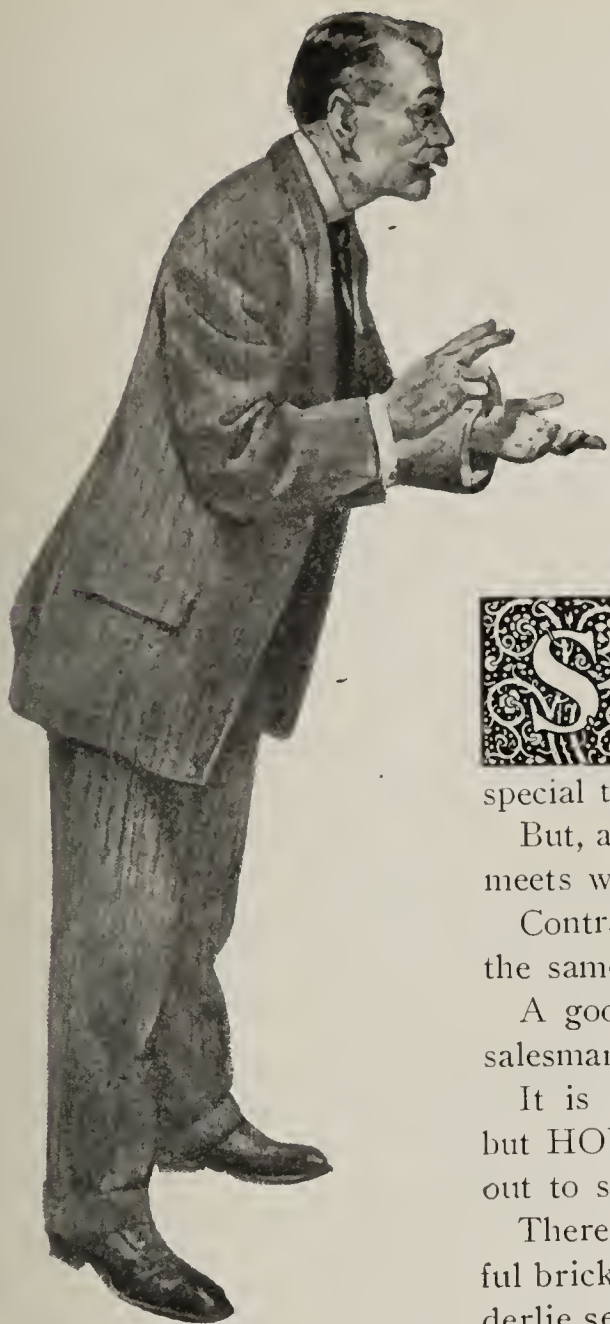
New Plants May be Necessary to Supply Demands of Builders.

The demand for clay roofing tile showed marked improvement in 1912. This material was originally brought from England and Spain, and its foreign birth has not detracted from its popularity in the least throughout the United States.

Roofing tile made of clay has advantages which recommend it not only to architects and builders, but to owners. Although not as cheap as other roofing material, it is fire-proof and adds to the safety of the building from outside fires. Roofing tile manufacturers are so overrun with business that they do not care to take anything in addition to what they have. This, however, does not decrease the popularity of the tile and it is probable that new plants will be necessary.—Chicago Tribune.

South Leads in Clay Products.

Clay products of the Southern states in 1911 amounted to more than \$29,000,000 and the Geological Survey is authority for the statement that the southern deposits probably exceed in area and volume those of any other portion of the United States of the same size.



Selling Brick

SALESMANSHIP APPLIED
TO CLAY PRODUCT PLANT

By Iverson C. Wells

This is a series of heart-to-heart talks on one of the most important and most neglected departments in the successful conduct of a clay product plant. Mr. Wells also will review current advertising by clay plants, as publicity is one of the essentials of good salesmanship. Manufacturers are invited to submit copies of their advertising for critical review.



SELLING is a science—as much so as chemistry, as biology, as physics. Like these it CAN be acquired and invariably is. Some persons may show a greater aptitude for chemistry than others, and, therefore, these make better chemists. Some may show a special talent for salesmanship and these make better salesmen than the average.

But, after all, it is mostly a matter of application and he who strives the hardest meets with the greatest success.

Contrary to the general idea, selling brick is like selling anything else, because the same principles underlie the entire science of selling.

A good sewing machine agent CAN sell brick. So can a successful grocery salesman, or shoe clerk or any other man who knows how to sell.

It is never a question if he CAN sell any given product that can be sold, but HOW LONG WILL IT TAKE TO LEARN ABOUT IT before he starts out to seek customers.

There are two points, therefore, first to be considered in developing a successful brick salesman. One is that the student must study the principles that underlie selling—whether it is cold storage eggs or silk dress goods. The other is that he must learn all there is to learn about the thing he proposes to sell.



SALESMANSHIP is really the art or science of being able to present to a prospective buyer all the information about a certain article in the most concise, convincing and comprehensive way. Some articles, by their very nature, lend themselves more easily to this application of a recognized fundamental principle than others. The difficult ones require more analysis, a more profound consideration and a more careful survey.

The student salesman who really wants to learn how to sell has much to learn, and he who becomes discouraged at this statement is lacking in one essential that will prevent him from becoming a successful salesman—dogged determination.

There are ten essentials in salesmanship:

1. Determination to succeed.
2. Cultivation of a pleasing address.
3. Educated enthusiasm.
4. Intelligent application.
5. Confidence in yourself.
6. Power of analysis.
7. Keeness of perception.
8. Ability to read human nature.
9. Knowledge of your product.
10. Faith in your product.

In subsequent issues it is the purpose of the writer to take up these Ten Essentials in the order named, devoting an installment to each subject every two weeks.

No selling force, however well organized or however capable its members, can accomplish anything unless there is a demand for the product it is seeking to sell.



HOWEVER meritorious an article may be, why should we expect to sell it unless the world KNOWS we have it to sell? The best bar of soap ever made, may dry on the grocer's shelf if a demand is not created for it either by verbal publicity, by newspaper publicity or by the grocery clerk's willingness to talk about it.

Nothing ever was sold unless a demand was created for it. This applies to building material and farm drain tile as well as Uneda Biscuits.

There are three ways to create a demand:

1. By going among your prospective customers and explaining the merits of your product.
2. By depending upon your first customer to do your advertising or trusting to chance that the world will hear of you.
3. By using modern publicity methods.

Where the output is small, the field limited and the profit great, method No. 1 is ideal.

Method No. 2 certainly is not to be considered in this day of competitive business, although many

brickmakers depend upon it almost exclusively.

Method No. 3 meets the approval of every successful selling force.

In a perfectly organized business where progress and profit are the keynote, one finds a sales manager whose chief duty is to look after the disposition of the product of the plant after it is manufactured.

If this sales manager is alive to his duties he will organize his selling staff about like this:

SALESMANAGER	{	Advertising Manager.
		Salesmen.
		Clerical Force.
		Delivery.

The successful salesmanager considers each element in this force as essential as the other.

When he chooses his advertising man he selects with the idea of getting the best man possible at the price he can afford to pay him, because a judicious and practical expenditure of money is necessary.

When he chooses his salesmen, he uses the same careful selection, because he must have men of judgment, of experience and ability.

When he chooses his clerical force, he employs the most competent to be had, because one mistake by a shiftless, careless bookkeeper may cost him the future business of a good customer.

When he chooses a delivery service he is guided by the same sane, practical methods.

Of course, in some plants the amount of capital invested and the amount of business done, does not warrant such an elaborate selling force.

The owner may be his own salesmanager, publicity man and salesman, and the stenographer the sole member of the clerical force, looking after the books and keeping the time book.

The point I have attempted to make, however, is that selling brick depends upon four elements—the publicity man, the salesman, the clerk who keeps the records and the delivery man.

These four elements may be in one man, but be this as it may, they still exist and must be considered as such.

And one element depends upon the other even as the soil depends upon the sun and the rains to produce a bountiful crop.

The clay product manufacturer, if he hopes to keep up in the procession, must weigh carefully each of these four elements.

The salesman, who is not aided by a local publicity campaign, is handicapped.

The advertising man who has not a competent salesman to follow up the leads and business his publicity work has created, has his labors for nothing.

The salesman and the advertising man who do not have the co-operation of the delivery man will face an almost impossible task, and those who depend on an incompetent clerk will find half their work goes for naught.

The advertising man creates a demand for a certain product by letting the public know that it exists.

The salesman finds a fertile soil for his tilling in the wake of the publicity man.

It can be seen, therefore, how closely interwoven are the various elements that go to make up a perfect selling force, whether it consists of one man or a hundred.

Advertising just because it is advertising is not always profitable advertising. As much care and thought should be paid to copy preparation as to buying a new machine. They are of equal importance because both cost money.



ANY beginners in advertising make the mistake of going blindly into the work. They look upon printers' ink much as the child does the good fairy. A wave of the fairy's wand is supposed to bring wealth and riches. A smear of printers' ink in any sort of a

(Continued on page 656)

When You Build

the Surpassing Beauty and Economy of Hy-tex must be Considered



There has long been a popular fallacy that brick is beyond the reach of persons who must build economically. Yet it is a fact which you can prove to your satisfaction by a little investigation that the more one is forced to economize in building, the less one can afford not to build of brick.

Hy-tex Brick
The one building material which can give you the greatest beauty, economy and permanency—and give it to you at the greatest saving of the long run.

Much more than "fire-proof" when into the cost of building. In building as in every thing, economy is judicious expenditure. Maintenance is the cost of a lifetime and Hy-tex reduces maintenance to its absolute minimum. The saving in repair and painting alone soon makes up for the difference in first cost between Hy-tex and cheap building materials.

Furthermore a Hy-tex home is guaranteed fire proof—your family is safe. It saves from 25% to 35% of the fuel bill, reduces fire insurance premiums, eliminates frequent plumbing and in the same token keeps the house cooler in summer.

We have just issued a new booklet, "BRICK CONCRETE AND MASONRY," dealing with the problems that are of vital interest to prospective builders. It is illustrated in colors throughout. Send for the FACTS in it that make it profitable and necessary for you. (Send the coupon back over printed on the fold) Send for your copy now.

HYDRAULIC PRESS BRICK COMPANY
Room 411, 111 South Dearborn
Chicago, Ill.

We also make Hy-mould Brick—the new waterproof moulded brick.

JUST DOPE

How much did it cost you last winter to have that frozen water pipe mended? It wouldn't have happened at all if you had had a brick house.

How much is it going to cost to paint your house this year? \$150.00 possibly, if it is a frame house. Nothing at all if it is a brick one.

How much insurance are you going to pay your Agent this year? A reasonable amount if it is a brick house. About fifty per cent more if it is a wooden house. And remember your chances of being burned out are in the same proportion.

A rich man is the only one who can afford to build with wood, for he can put up a new one when ever he wishes, but the man of moderate means who builds once and for all, and wishes to leave an inheritance for his children cannot afford to use any thing but brick.

Needles and pins, needles and pins.

Build of wood and your trouble begins.

Watch this space every Thursday and Sunday.

GEORGIA-CAROLINA BRICK CO.

AUGUSTA, GEORGIA

Build Your Home of BRICK
THEN YOUR HOUSE WILL BE
"COOL IN SUMMER"
"WARM IN WINTER"
"ALWAYS PAINTED"
By Far the Cheapest in the Long Run
When You Build Use BRICK
Standard Brick Manufacturing Co.
Up-Town Office, 328 Sycamore

"RATINE" FACE BRICK
A beautiful "ratine" pattern FACE BRICK, combining artistic appearance with highest quality.
IMPERVIOUS "CRAVENETTE"
A high-grade FACE BRICK, known and used throughout the South.
You can get Carload Rates on all orders for Five or More. Let us tell you how.
STANDARD BRICK CO., Macon, Georgia
W. E. BURWOOD, Pres.

DENISON TILE
BUILDS THE BEST WALL
Prevents Heat-Communicating
DEAD AIR SPACES
ITS VENTILATED
air flow
The Clay Product Co.
CHICAGO
Established 1903

In the Flood's Wake

(Continued from page 613.)

James Knox	\$ 2.50	Trafford, Pa.:	
Geo. Garton	1.00	H. T. Wynn	\$ 1.00
Joe Witchner .....	.50	John Bucar .....	.50
Fritz Walcher	1.00	Evan Turcovich .....	.50
Bert Dailay .....	.50	Evan Mahan .....	.50
Henry Gollightly	1.00	Tom Radosh .....	.50
Frank Garamona .....	.50	Geo. McLaughlin .....	.50
John Gulliard .....	.50	Harry Kunkle .....	.25
Claus Carlson .....	.50	J. Kunkle .....	.25
Richard Hall Gronfell	1.00	Wm. Kunkle .....	.25
Swan Johnson .....	.50	Ed. Dungee .....	.25
Wm. Collins .....	.50	John Rabone .....	.25
Frank Carlson .....	.50	Evan Bogovich .....	.25
J. W. Bantley	1.00	John Socol .....	.25
O. Thorson .....	.50	Joe Socol .....	.25
C. H. Brown	1.00	Paul Yandrich .....	.50
Albert Anderson .....	.50	Marco Slobodnick .....	.50
John Marky	1.00	Steve Povlich .....	.50
John Tebou .....	.25	Mart Novosel .....	.25
Tim Grenfell	1.00	Mike Glash .....	.50
Harry Brown .....	.50	Jim Shepush .....	.25
Gus Swanson .....	.50	Tony Radella .....	.50
Clyde Labualae .....	.50	John Petorshnack .....	.50
Joe Maughan	1.00	Frank Mlashak .....	.25
Employees Wynn & Starr.		Pete Slobodnick .....	.50

Appealed to by "Brick and Clay Record," many representative firms and individuals connected with the clay-working industry stated that they had already subscribed through other sources. Among these were:

Illinois Brick Co.	\$250.00	Thomas Moulding Brick	
Bach Brick Co.	50.00	Co.	50.00
Hydraulic-Press Brick Co.	50.00	F. W. Lucke & Co.	25.00
Jenkins & Reynolds Co. .	25.00	Curtis Brick Co. (em-	
Calumet Brick Co.	10.00	ployees)	10.00
Jos. Hanreddy Brick Co. .	10.00	Standard Material Co. .	25.00
Wisconsin Lime & Cement		McLaughlin Building Ma-	
Co.	50.00	terial Co.	125.00
Meacham & Wright Brick		Garden City Sand Co. .	35.00
Co.	25.00	Chicago Retort & Fire	
S. S. Kimbell Brick Co. .	100.00	Brick Co.	25.00

Subscriptions of varying amounts were made by "Brick and Clay Record" readers to funds that were being raised locally and in which they were interested personally. Among those who contributed in this way were Clyde Brick & Tile Works, of Clyde, O.; Nelsonville Brick Co., of Nelsonville, O.; W. L. Macatee & Sons, Houston, Texas; Winkle Terra Cotta Co., St. Louis, Mo.; Metropolitan Paving Brick Co., Canton, O.; Bridgeton Brick Co., Bridgeton, N. J.; Dunn Wire-Cut Lug Brick Co., of Conneaut, Ohio; Chambers Brothers Co. (through Philadelphia office); John M. L. Sexton, Chicago; Kaysville Brick Co., Salt Lake City, Utah, and James J. Lyons, Chicago.

In addition to the cash subscription included in the published list, the Thomas Moulding Brick Co., of Chicago, volunteered to contribute the major part of a large consignment of lime to be used for disinfecting purposes in the flooded districts. This company, with several others, secured a total of six carloads of the much needed disinfectant and doubtless helped largely to forestall the added disaster of disease following in the shadow of the flood horror.

The Letter Box

Reminiscences of "Early-day" Brick Making.

The following letter from F. M. Gardner of Mt. Vernon, Wash., is of especial interest, as it links modern brick making in the far west with primitive methods of the early '60's in Ohio. Mr. Gardner was one of the original members of the Ohio Brick and Tile Association and has watched the growth of the industry almost from its infancy. His letter follows:

Editor of "Brick and Clay Record:" It has been a long time since I penciled any lines to you, so I send this to let you see that I am still on top and on a brick, tile and hollow block yard, owned by the Knapp Brick & Tile Co., here on the coast among the firs and cedar trees that grow from 150 to 200 feet high and from 6 to 12 feet in diameter, making from 27 to 40 cords of 7 ft. wood with bark 4 to 12 inches thick that burns like coal. This is a new plant of 5 to 30 thousand per day. Mr. Knapp, the head of the business, is a hustler. Although not an experienced man he gets his ideas from "Brick and Clay Record," and goes ahead. I came here this winter and laid out an up and down kiln which I have already set and burned twice with good results. The kiln is 26 ft. in diameter, 8 ft. to crown, 5 ft. raise. The clay is different from anything I have ever seen before, having on top, 18 inches of a material that in drying turns white. It will polish all kinds of metal. I took samples to all the jewelers in Everett and they pronounced it one of the best polishes known. Under this clay is 6 feet of a yellow silica clay; then comes blue with spots of black, very fine ground, without any grit. It is 60 feet in depth and is very tough. It is very heavily charged with aluminum.

Mr. Knapp has made some very nice pottery, such as flower pots, jars, vases, hanging baskets, spittoons, etc. There are sea shells mixed through the clay and it is so different from any of the soil in the surrounding country that I suppose it must have been washed here the time of the flood. It becomes a nice cherry color, has a clear metallic ring and I do not think there is any finer modeling clay known. On account of its toughness and plasticity I think it would make good tile roofing, also fine decorative ware. It is necessary to dry it before it goes to the machine.

The company has just purchased one of Fate's hollow block and tile cut-off tables which they feel proud of as it saves one man's time and does fine work. We use a tunnel dryer. There is a large territory here that wants all and more than the plant can turn out and the Knapp Company is doing all it can to supply the demand. Will send you a photo. Perhaps you will want to come out on a vacation and catch some of the shiny trout in the stream that runs by the plant and see the "old Buckeye" that was at the first Ohio Brick and Tile Convention at Columbus, and was a member for 17 years. I read the first copy of "Brick" and have lived to see machines do the work that I had done by hand for 15 years, and have seen the fine modern pressed brick take the place of the hand mould type and have watched with interest all the changes from '63 up to the present time and I wonder what changes will take place in the next 40 or 50 years. My son is now taking up brickmaking so he perhaps will see, but let any man toil on a brick yard most of the time from 16 to past 67 years and he begins to think of a "Brick Head Stone."

F. M. Gardner.

Mt. Vernon R. R., 6, Tiloh, Wash.

AUTOS MODELED IN CLAY.

Every Part of the Intricate Machinery First Molded in Clay Before Machinist Begins Work.

The Garford Co., of Des Moines, Ia., furnishes an illustration of the importance of clay modeling in the motor car industry. Every model of automobile turned out by this company for the approval of the buying public is first perfected in clay before a machinist begins working on the metals and wood, of which the completed car is composed.

Touring car, or big limousine, in exact scale and true to the slightest detail, is built of clay in the designing room, away from the prying eye of the public and the possible competitor. Every part of the proposed new model is built up of clay, to pass in review before the designers and engineers for criticism and suggestions. Body, engine hood, even mudguards and square tires are moulded, perfect in line and detail and exactly like the cars which will later be made out of metal and wood.

EDITORIAL SECTION

Volume XLII. CHICAGO, APRIL 15, 1913 Number 8.

THE SILVER LINING IN THE STORM CLOUD OF THE OHIO FLOOD

Someone said once that every cloud has its silver lining and the saying is a trite one. The lining **IS THERE**, no matter **HOW** black the cloud and it remains for us to **LOOK** for it. The dark cloud of despair that hangs over the flood-stricken area of Ohio and Indiana may seem too heavy ever to permit the sunshine of hope and a greater and brighter future to pass through, to those who have suffered, but already the rift in the lowering skies is seen.

Dayton, flood-swept for days—its homes and factories razed to the ground, its stores and business blocks with their great stocks of merchandise ruined beyond salvage, its streets but avenues of desolation—Dayton, the home city of Ohio, with its dead and its destitute, its sick and suffering—this city, the most stricken of all, already is recovering from the shock.

Through the rift in the dark clouds of despondency there is seen a newer and a greater city. Towering skyscrapers of modern construction, fire-proof homes of imperishable clay, everlasting pavements of brick—all these may be seen and busy hands and active brains are bringing them into the realm of reality.

Dayton and her sister cities who have suffered have been sorely tried but the unconquerable spirit of the American—his faith in the future, his optimism, his ceaseless energy, will lift them from the mire, from the wreckage and from the ruins that have been left in the wake of the unbridled waters, even as Chicago, as Baltimore, as Galveston and as San Francisco rose Phoenix-like, to a greater and a grander and a better future.

It takes such lessons as these to make us look to the **FUTURE MORE** and concern ourselves **LESS** about the **PRESENT**. We built **YESTERDAY** on the **IMPULSE**. **TODAY** we weigh well the problem and build for **STABILITY**, for **DURABILITY** for **SAFETY**, for **PROTECTION**—**WHETHER** it is from fire, frost time or flood.



THE CLAY- WORKER IN WAKE OF THE OHIO DISAS- TER

With all the ruin and desolation and the suffering and the sickness that follow in the wake of the great flood in Ohio one is apt to decry the commercial spirit.

If this spirit has selfishness as its impulse the disgust is natural. If it is moved by **NOBLER** purposes and prompted by an **UN-SELFISH** desire to **BETTER** conditions, then it is to be **COMMENDED**.

We are too apt to find fault with our neighbors. We are too prone to question their actions and to cast aspersions.

In times of distress—in the hour of despair, when a people are still dazed from the shock of some great disaster, quick action must be taken if practical relief is given.

When homes are swept away and factories are closed—when the washed-out streets are filled with wreckage and beautiful parks are a dumping ground for debris and a city awakens to the realization that it has **CEASED** to be a component part in the **GENERAL PROGRESS** of a Nation except in the spirit of the people, it is **TIME FOR ACTION**.

Men of brains, of plans, of action, of initiative and daring must step forward. It is up to **THESE** to bring **ORDER** out of **CHAOS**. It is up to them to **REMODEL** and **RECONSTRUCT**. It is up to them to **PLAN** and **DEVELOP**.

Great groups of houses must be built. Streets must be paved. Parks and parkways laid out. Business blocks, factories and storehouses planned and constructed.

Someone must do these things. **SOMEONE** must supply the raw material and the labor and the capital.

The commercial spirit that prompts men to do **THESE** things—to accomplish **THESE** results, must not be decried or belittled.

And the clayworker, **CHIEF** among all, must step forward and become an **ACTIVE** element in the rebuilding and the planning, for it is upon him the **BULK** of the responsibility **SHOULD** rest.

It is time for the associations in the industry to put to test the value of **REAL** co-operation. The National Brick Manufacturers' Association, as the parent body, should act first of all. A concerted movement should be launched. Meetings of clayworkers must be called in Dayton. A carefully

worked-out plan of action must be determined upon. Committees of **REAL** workers must be appointed.

The National Paving Brick Association, the Building Brick Association of America, the American Face Brick Association, the Ohio Face Brick Association, the Cleveland Face Brick Association, the Ohio Tile and Clayworkers' Association and all kindred organizations should take an **ACTIVE** part.

Buildings are to be erected, streets paved, sewers laid, farms drained, and the clayworkers should see that **IMPERISHABLE CLAY PRODUCTS ARE USED**.

Conferences with the civic bodies of Dayton should be arranged, meetings with the business men and those other citizens who **DO** things, held, and the **RIGHT** way pointed out for the future of the newer and greater Dayton.

For **EVERY** frame house that was swept away in the flood a brick home should be built. For **EVERY** concrete or asphalt street that was gutted and furrowed and rendered useless a brick-paved thoroughfare should be laid.

And the time to make **SURE** this will be done is **NOW**, because the razed buildings and the gutted streets stand as a **CONVINCING** object lesson and are still **FRESH** in the minds of the people.

Associations are not formed for the sole purpose of members meeting once a year and **PATTING** each other on the back and saying **PRETTY** things about each other.

There is **REAL** work to do between times.

Associations have as their object the **ADVANCEMENT** of the industry they represent.

And what **ONE** thing would advance the industry more than a concerted action that will make Dayton a **MODEL** for all cities to pattern after?

What **ONE** thing will teach the lesson of imperishable clay better than a united effort, centered in a spot on which the entire world is watching?

Chicago and Baltimore, swept by fire, set an example for the rest of the world by making fireproof cities.

San Francisco, crumpled by earthquakes, rebuilt for stability and the world **TALKS** about it.

Dayton, in the heart of the clay industry, is being watched. Other cities, which realize the danger of fire and floods, as these destructive elements hover over them in a menacing and threatening attitude, are waiting to see how the stricken city will handle **ITS** problem.

And clayworkers of the Nation, no greater opportunity than this has offered itself to you. Stand together. Pull together. Work together.

Who shall be the Moses? Who shall be the Napoleon? Who shall take the initiative? Who shall be **BIG** enough, **GREAT** enough, **BROAD** enough to take up the work that awaits him?

**WATCH THE
LITTLE
THINGS
ABOUT THE
PLANT**

Some people concern themselves only about the **BIG** things of life. They rate themselves as **BIG** men and argue that **BIG** men do not do **LITTLE** things. Measured in the unbiased judgment of the world these same **BIG** men usually get a **TWO-BY-FOUR RATING**.

We are told as a child that "Pennies make the dimes and the dimes the dollars."

The successful man puts into play the same good advice when he starts out to carve his way to success.

The business man who courts success watches the **LITTLE** items in his business because the **LITTLE** leaks grow into **BIG** leaks and are harder to stop.

The professional man who achieves distinction lays the foundation for his training by learning the details—the **LITTLE** things, because he knows the **BIG** things will take care of themselves and are easier to remember.

The successful laboring man learns well the fundamentals of his trade, knowing that he who is well-trained is more apt to develop into a contractor or mill owner.

Thus, it is seen that **SUCCESS** in life depends on watching the **LITTLE** things, and the clayworker has the lesson to **LEARN** as well as the merchant, the lawyer, the laboring man or the factory owner.

A loose screw, if **UNNOTICED**, may throw out of commission an entire plant for a **WEEK**.

One broken belt fastener, if **UNNOTICED**, may cripple the plant and cost hundreds of dollars in repairs and as much more in lost time.

An untidy office may give a prospective customer an **IMPRESSION** that will **TURN** him to your competitor.

Unsatisfactory delivery to one small customer may make him a **CHRONIC KNOCKER** and **INJURE** you among the people of an entire community.

It is better to **TRAIN** your help to watch the **LITTLE THINGS** than to encourage them to slight the details in a maddening effort to increase their output.

The **TRIVIAL** things really are quite often the really **BIG** things.

One simple suggestion from the youngest and most inexperienced employe under you may **SAVE** you a thousand dollars in twelve months.

There is **NOTHING SO SMALL** or so insignificant that is not **WORTH WHILE CONSIDERING**.

And the man, be he a clayworker or a railroad president, who makes **EVERY** ounce of energy count, **EVERY** cent of his investment work, is the man who looks after the **LITTLE** things and lets the **BIG** things take care of themselves.

Bricklayer Urges Co-Operation

LABOR CHIEF OFFERS N. B. M. A.
GOOD WILL AND MONEY OF UNION

The continuation and conclusion of the full stenographic report of the recent Twenty-seventh annual convention of the National Brick Manufacturers' Association is here given, the same being copyrighted in accordance with the instructions of the Association.

Illustrated from Drawings and Photographs

Co-operation between the bricklayer and the brickmaker was the keynote of Friday, the concluding session of the twenty-seventh Annual Convention of the National Brick Manufacturers' Association recently held in Chicago. Thomas Preece, vice-president of the Bricklayers', Masons' and Plasterers' International Union, was a guest of the Association and delivered a very able address in which he urged co-operation and assured the delegates that his organization would more than meet the brickmaker half way in any effort that would bring about a better feeling between the two branches of the industry.

The last day's session was devoted almost entirely to the reading of papers. In the April 1 issue of this journal the stenographic report gave an account of the early morning session, including several papers. The report was interrupted just before the introduction of A. D. R. Johnson, of Raleigh, N. C., who spoke on "The Business Man and the Trend of Modern Legislation." This paper was a very able one, but on account of its length will not be printed in these columns until a subsequent issue.

Following Mr. Johnson's paper was one by J. E. Howard, of Washington, D. C., who had as his subject, "Tests of Two Brick Piers of Unusual Size." Mr. Howard spoke as follows:

Two brick piers were recently tested at the Pittsburgh laboratory of the Bureau of Standards, the results of which are of special interest, since they have demonstrated that the strength of large masses of brick masonry possess substantially the same strength, per square inch of sectional area, as the piers of smaller sizes on which information has heretofore rested. While it is believed that the ultimate crushing strength of brickwork is a function of volume, up to a certain limit, still brick piers of six to eight cubic feet volume are sufficient in size to represent the strength of larger masses. The tests, however, of single brick or a few brick cemented together will show a much higher compressive strength than that which is realized in piers of ordinary size.

The manner of failure of brick piers when loaded to destruction explains why volume has an influence on ultimate strength. Piers begin to fail by the development of transverse fractures of the individual brick due to unequal yielding of the mortar in which the pier is laid and to irregularity in shape of the brick.

The brick themselves are commonly stronger but less compressible than the mortar of the joints. Unequal yielding of the mortar tends to strain the individual brick of the pier in a transverse direction and causes the pier to break up into a clustered column of half brick. When the volume of the brickwork has reached a certain size the individual brick are exposed practically to maximum bending conditions, and any further increase in size does not increase the severity of those conditions.

Regularity in shape of the brick tends to promote strength in the pier. If the rate of compression of the mortar was exactly the same as that of the brick, regularity in shape would not be as important as it now is. Joints of even thickness and mortar approaching in compressibility that of the brick, as nearly as practicable, each are contributing factors toward strength in the pier.

Tests show that the properties of the mortar affect the ultimate strength of the pier very materially, and also the rate of compressibility of the brickwork. A rich cement mortar assists in making the pier a strong one, while one laid in lime mortar is very compressible and low in ultimate strength. In order to

attain maximum strength the brick, in addition to being strong themselves, should be regular in shape and be laid either in neat cement or in a very rich cement mortar. A strong, hard burnt brick would naturally be selected if great strength was desired in the pier, but regularity in shape not infrequently more than compensates for differences in strength between two grades of brick. The regularity in shape of certain face brick enables them to display a notable gain in strength in the pier over that of common building brick of equal hardness.

Suggests Methods to Prevent Transverse Breaks.

Since transverse fractures are the first to develop and precede actual crushing of the material, it follows that the ultimate strength of piers commonly admit of increase by regulating the manner of laying the brick. That is, modifying the manner of laying so that an increase in transverse strength of the brick is attained, tends to increase the strength of the pier. This may be accomplished by laying several courses without breaking joints or the brick may be laid on edge instead of flatwise. These modifications in the manner of laying outweigh advantages commonly thought to result from adherence to conventional practice in respect to the disposition of headers and stretchers. Indeed, it is probably quite immaterial how the headers and stretchers are arranged when the brick are laid flatwise and the joints broken at each course as usually witnessed in brickwork.

As beams, the brick are stronger when placed on edge than when taken flatwise. Likewise, laying several courses without breaking joints gives a stronger beam action and promotes strength in the pier. Tests have not always shown a gain in strength from these considerations, but commonly there is an increase, and not infrequently it is exhibited in a marked degree.

Concerning the present state of knowledge on the strength



Figure 1. Brick pier 4 ft. square by 12 ft. high in testing machine.



Figure 2. Appearance of brick pier 4 ft. square by 12 ft. high laid in cement mortar after testing. The age of this pier when tested was four weeks and three days.



Figure 3. Appearance of brick pier 4 ft. square by 12 ft. high, laid in lime mortar, after testing. Age of pier when tested, three weeks four days.

of brickwork, a sufficient number of tests appear to have been made to definitely indicate what features contribute toward strength, and information is available from which brick piers can be laid which will possess a given ultimate strength. That is, there is a certainty in the use of brick and when desired a given ultimate strength may be attained. As to enduring qualities, the permanence of brickwork is well established. A well burnt brick is in a state of structural stability, the truth of which ages of experience have demonstrated and confirmed. Brick is a safe material to use.

Referring to the two large piers tested at the Pittsburgh laboratory they were about four feet square by twelve feet high, weighing a little more than thirteen tons each. They were built of common, hard burnt, wire cut building brick from one of the yards of Messrs. Booth & Flinn, Pittsburgh. One pier was laid in 1:1 cement mortar, the other in 1:3 lime mortar.

Selects Brick of Special Strength.

The brick were selected with a view of laying a pier which would display a crushing strength of about 3,000 pounds per square inch when laid in cement mortar, provided this pier of nearly 190 cubic feet volume had a strength per square inch of cross sectional area proportional to one of 8 cubic feet volume. The pier actually displayed an ultimate strength of 2,917 lbs. per sq. in., indicating substantially the same strength in each size. Similarly the pier which was laid in lime mortar was expected to have an ultimate strength somewhat less than 900 lbs. per sq. in. It failed at 757 lbs. per sq. in.

Pier laid in	Dimensions		Sectional area, square inches	Average square thickness of joints	Remarks
	Height	Cross Section			
1:1 cement mortar...	12 ft.	47.5	47.5	2,256	$\frac{5}{16}$ in.
1:3 lime mortar....	12 ft.	47.5	47.5	2,256	$\frac{5}{16}$ in.
First crack,	Ultimate strength				
Total lbs.	Total lbs.	Lbs. per sq. in.			
4,737,600	6,580,000	2,917			
676,800	1,710,000	757			

Owing to their great size the piers were built in the testing machine, where they seasoned until the time of testing. Figure No. 1 (see accompanying illustration) shows the pier which was laid in cement mortar as it appeared when observations on its rate of compressibility were being made. This occurred

when the pier was 16 days old, the test being completed when 4 weeks 3 days old. Ten gauged lengths in all of 20 inches length each were established on the four sides, the extremities of which were defined by small metal plugs cemented in the brick. As loads were applied and advanced the compression of the pier was measured on these 20-inch lengths by means of a certain gauge, in practically the same manner as thermal effects on cement filled brick pavements are being observed by means of that instrument. The compression of the lime mortar pier was measured when it was 25 days old.

The appearance of these piers after testing is shown by Figures Nos. 2 and 3 (see accompanying illustrations). Along the middle of their heights the sides opened laterally. Frictional resistance at the ends, between the brickwork and the platforms of the testing machine, strengthened the piers against lateral deformation and probably influenced the pyramidal shapes assumed after rupture. The manner of failure of these large piers was the same as that witnessed in piers of smaller dimensions.

Diagrams are presented to illustrate the behavior of these piers during test and at their ultimate strength. Figure No. 4 (see accompanying illustration) shows the compression curves of the two piers as loads were successively applied. The pronounced difference in their rate of compressibility is well indicated. This difference is, of course, due to the difference in the mortars used. These curves represent the total compression of the brickwork, which in the case of the lime mortar pier was chiefly permanent set. But that of the cement mortar pier at 1,000 lbs. load was about one-third permanent set and two-thirds elastic compression, or stated differently, the cement mortar pier would recover about two-thirds of the observed compression upon release of load.

Three curves are given for the cement mortar pier, one representing the mean compression, one representing the minimum compression of the several gauged lengths, and one gauged length which displayed the maximum compression. Since the ends of the pier were in contact with and were moved by the rigid platforms of the testing machine, this difference in the amount of compression on the several gauged lengths, which were established along the middle of the height of the pier, represents unequal compression locally, and would occasion bending stresses in the brick and lead to the formation of transverse fractures.

Pier's Strength Less Than Single Brick.

The difference in the rate of compression of the two piers is further shown by Figure No. 5 (see accompanying illustration). The comparison is made at two periods of loading, at 300 lbs. per sq. in. and at 500 lbs. per sq. in. It chanced that the relative compression was the same at each load, the cement

mortar pier compressing only one twenty-sixth the amount of the lime mortar pier.

Whatever kind of mortar is used the ultimate strength realized in a pier is much less than that displayed in the tests of single brick. Fig. No. 6 (see illustration) shows the relative strength of the individual brick of which these two piers were made and the strength of the piers themselves. The cement mortar pier developed 29 per cent of the strength of the single brick, while the lime mortar pier showed only $7\frac{1}{2}$ per cent the strength of the single brick. These results are not unusual in

of stresses is one of the functions, however, of each of the materials of construction, and it is proper to consider the means by which the full structural value of the material may be made available and utilized when desired and held in reserve as a wide margin between working loads and ultimate strength.

It has been mentioned that in addition to the use of rich cement mortar the ultimate strength of brickwork admits of increase by modification in the manner of laying, or that generally such is the case. The results of some earlier tests will be introduced which appear in Fig. No. 7. These four piers were

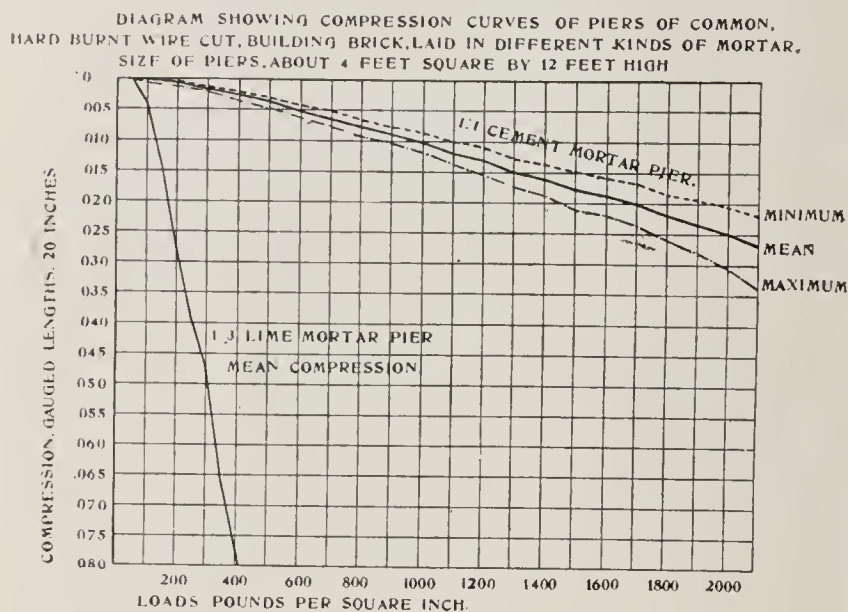


Figure 4. Curve showing relative compression of brick pier, laid in cement mortar and lime mortar.

kind nor degree. It seems a waste of material to lay brick in lime mortar when the question of strength is involved, and it is deserving of consideration whether a larger percentage of the strength of the individual brick cannot be availed of than commonly results even when rich cement mortars are used.

It is customary to regard the strength of brickwork as greatly in excess of practical requirements. The successful resistance

RELATIVE COMPRESSION OF PIERS OF COMMON, HARD BURNT, WIRE CUT, BUILDING BRICK, LAID IN 1:1 CEMENT MORTAR AND IN 1:3 LIME MORTAR.
SIZE OF PIERS, ABOUT 4 FEET SQUARE BY 12 FEET HIGH.

AT 300 LBS. PER SQ. IN.

AT 500 LBS. PER SQ. IN.

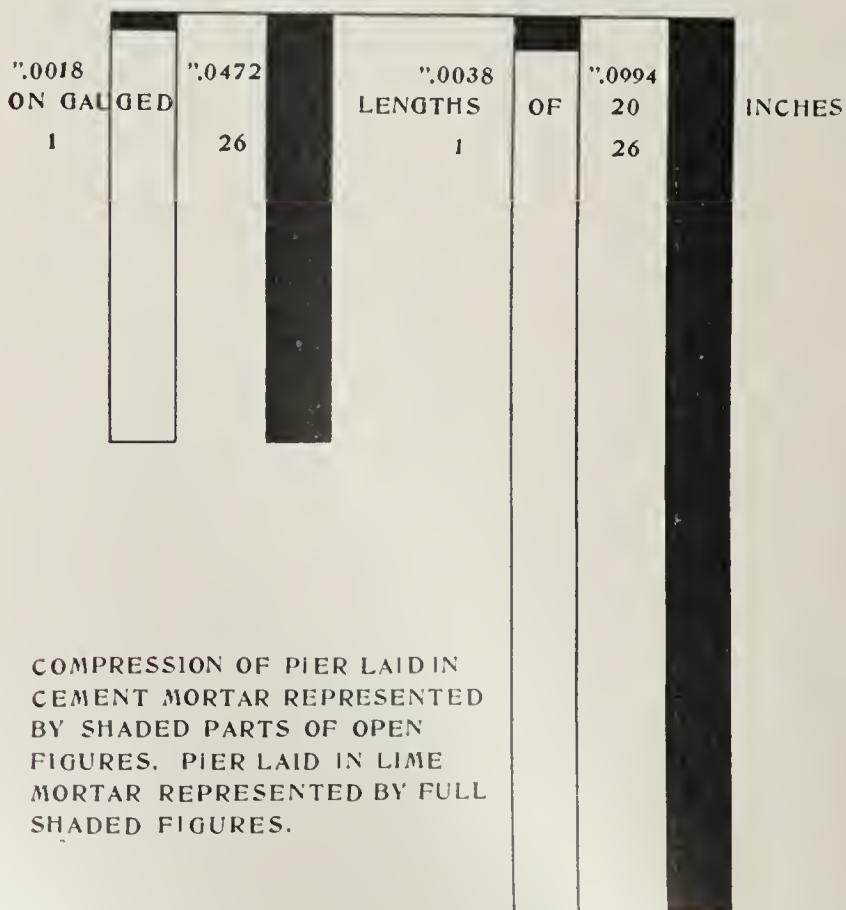


Figure 5. Diagram showing difference in compression on piers laid in cement mortar and lime mortar, at loads of 300 lbs. per square inch respectively.

INDIVIDUAL BRICK.

10,090 LBS. PER SQ. IN.

100 PER CENT.

COMPARATIVE STRENGTH OF COMMON, HARD BURNT, WIRE CUT, BUILDING BRICK, TESTED SINGLY AND WHEN IN PIERS LAID IN 1:1 CEMENT MORTAR AND IN 1:3 LIME MORTAR.

SIZE OF PIERS, ABOUT 4 FEET SQUARE BY 12 FEET HIGH.

CEMENT MORTAR PIER.

2,917 LBS. PER SQ. IN.

29 PER CENT.

LIME MORTAR PIER.

757 LBS. PER SQ. IN.

$7\frac{1}{2}$ PER CENT.

Figure 6. Diagram showing relative strength of individual brick and pier made of the same grade of brick, when laid in cement and in lime mortar.

built of the same kind of brick and laid in the same kind of mortar, the difference in strength displayed being due to the manner of laying as regards breaking joints or laying the brick on edge instead of flatwise. It will be noted that each of these four piers is a very strong one, hence the gain in strength by change in manner of laying is real as well as apparent.

Taking the strength of the pier laid in the ordinary manner, with brick flatwise and joints broken at every course, at 100, there is a final gain of 57 per cent displayed by the pier with brick laid on edge and joints broken every third course. These results are regarded as somewhat exceptional, however, and while it is not believed that such a marked increase in strength would commonly be experienced, still that a substantial increase in strength would ordinarily follow these modifications in the manner of laying.

VICE-PRESIDENT C. P. MAYER: We thank Mr. Howard very much for his paper. If there is anyone who wants to ask him any questions he now has an opportunity to do so.

PROF. ORTON: Mr. President, I would like to ask Major Howard if any unusual methods were employed in building these big piers. You know how a mason when he builds a wall, lays the outside of the wall first, and then he slushes in roughly the interior part of his wall. Was that the case in your big piers; did you build the outside work from the center, or in your construction of them did you build them solid?

MR. HOWARD: The pier was built quite solid and

great care was exercised. All the end joints were well filled and the different joints also were all fairly uniform and continuous. An effort was made to get a good pier and necessary care was exercised to see that that was accomplished. The joints were a little wider than we really desired to have them, but I think we got something like 400 pounds per square inch if they were thinner, but they were something like three-eighths of an inch; but if every brick was selected and great care exercised in laying them, possibly better results might have been accomplished.

Orton Questions Form of Construction.

PROF. ORTON: I would like to ask also, Major Howard, whether you can give us any sort of an estimate of about how much falling off from these figures we should expect if the brick had been laid by the ordinary methods of construction, that is, with no more care than we are apt to secure in a piece of commercial brick work; can you give us any sort of an estimate of that?

MR. HOWARD: I hardly think that I can do so. That part has come to my mind occasionally, and it has been the desire on my part to secure brick work laid in a number of cities, according to their usual manner, that we could secure some examples of piers which are made up in this city, or any of the other larger cities, which would fairly represent the quality of the work which is prevalent there. To get these piers made without any knowledge on the part of those, perhaps, who were laying them, that they were for testing purposes, so that we might have a real good comparison of what we expect to find in the market, with those which we have used.

We could, of course, in the laboratory put up some piers with a little less care, but that would not really signify that it would work in any particular city, and the results which we might reach from time to time would not be particularly valuable.

It is the great care that is required, but a very careless use of material is perhaps found in the case of some brick work which goes into service, and I think it would be of great interest to all to know about how much to expect of brick work laid in different cities under ordinary conditions, so that if it does not come up to a reasonable standard steps might be taken to see that the contractors exercise reasonable and proper care.

PROF. ORTON: I would like to know also whether this big machine which you are operating in Pittsburgh is such as could be used for testing the strength of brick arches laid in cement. For instance I put in a piece of construction recently for which I used a part of brick laid dry upon a center and then slushed in with a one to one cement mortar; and it has occurred to me the question how strong a job I really got there, and whether engineers are able to reach figures on that situation.

Now, I was wondering whether your machine, by use of proper tension braces on the sides of an arch could be applied to press down such an arch construction as that and get good results.

MR. HOWARD: That matter was brought up, and it is right in line with a subject which has recently presented itself to the Bureau in regard to that specific device.

There are some very important lines of work which ought to be inquired into, and that of brick arches is one of the important things on which we were not well supplied with accurate information.

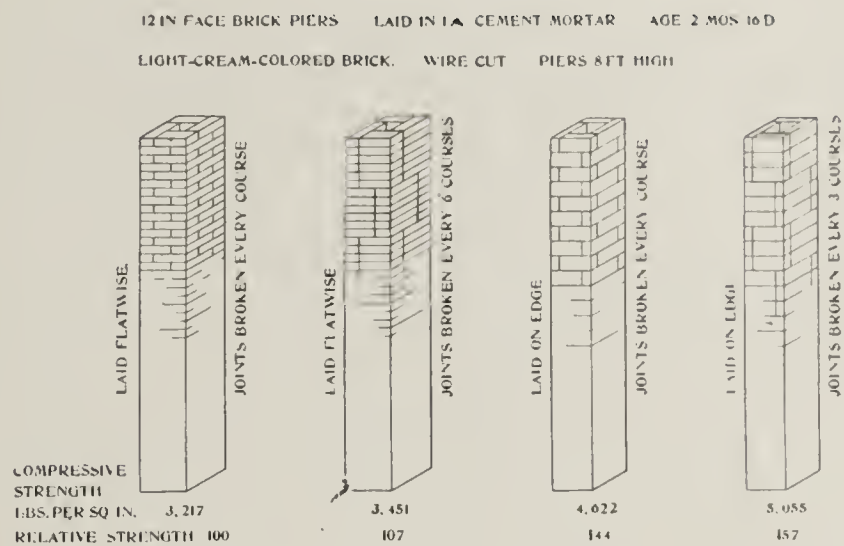


Figure 7. Diagram showing relative strength of brick piers made of same grade of brick as modified in the manner of laying.

The bureau has under construction at the present time a machine especially adapted for the testing of brick arches, and plate girder bridges, of large spans, up to some 65 or 75 feet in span, so that we may put in, or build in a brick arch of sizable dimensions. This machine will have a capacity of four million pounds. It would put upon the arch such a load as would come upon it if the arch was used for railway purposes. I am very glad that Professor Orton has made this inquiry, because it has occurred to us in the Bureau that we are on the right track in asking Congress to aid us in the securing of a machine which will go beyond the average size of laboratory tests, and approach conditions which prevail in practice. We really do not know from actual experience, or even any experimental knowledge, what a large brick arch will stand, and we think we should have that information.

PROF. ORTON: Just one more question; would it, coming back to my original question, be feasible to make that kind of a test with any satisfaction with your present equipment, pending the procurement of a better machine?

MR. HOWARD: Not to any very considerable extent. That would be a test for which I would rather see provided a suitable machine, so that we might reach the best results with it.

Finds Present Machine Inadequate.

PROF. ORTON: So that with your new machine you will be able to load your arch symmetrically, and in your present machine you would have to load it in the center?

MR. HOWARD: We could load it in the center, yes; but not symmetrically. We could not load it so that the pressure would be on different parts of the arch and sides, from an engineering point of view with that precision and accuracy and degree of satisfaction which we could obtain if we had the special type of apparatus for that purpose.

PROF. ORTON: You would not recommend, then, the spending of any money at present in a test of arch construction?

MR. HOWARD: I wish it might be deferred until the time arrives, which I hope will be very soon, when we can do it with great success.

PROF. ORTON: Has the Bureau of Standards definite arrangements made for the procuring of this big machine, or is it simply a matter in contemplation?

MR. HOWARD: The Bureau has had a design submitted for the machine, and it is a machine of magnitude, and it requires housing and land area suitable for the

purpose and that has also been provided for in this way: the subject has so commended itself to certain parties that land, if it is acceptable, or if it can be accepted by the Government as a gratuity, has been offered in the suburbs, of Brooklyn for the establishment and maintenance of a testing machine of that capacity, and a plant completed for the general type of this large machine.

PROF. ORTON: But no appropriation has been made?

MR. HOWARD: No appropriation has as yet been made.

WILL C. BLAIR: The debates and discussion of this question open such a large one incidentally to the brick interests that I hardly now know how to approach the discussion of it myself.

I have been astounded to find out that there has been so little done, and so little investigation for the benefit of the brick makers of this country, and that, so far as responsibility comes upon me, I feel absolutely ashamed.

I designed and constructed myself some years ago, it is true, some 15 or 20 bridges, the largest one had a span of 30 feet, and when I come to go into the engineering books, when I come to go out for any sort of information upon that subject, I find absolutely nothing printed in the English language.

Bemoans Lack of Brick Data.

Any engineer can go to work and design a bridge in steel or can even go to work and design a bridge in reinforced concrete today, and he has data that has been furnished by some of the research work in our different educational institutions, from which he can base his design and figures. Now, I say I went to work and I designed and built what I believed to be some of the best looking and some of the finest bridges that ever my eyes rested upon, but I did it all by mere guess; but they are all standing today, and I believe they will stand for the next ten thousand years. They were made of vitrified brick. But I don't know how much they will bear up. I don't know what strain they may be subjected to in order to hold up. I don't know what strain they may be subjected to with safety. I could not obtain this information, though I think we should have had it; we should have been busy in this Association, and we should have demanded of the public educational institutions of this country that they install a department of research work, just as is going on in nearly every institution in this country in a study of strength in cement. But as to the strength of brick work, we have left that proposition up to a few contractors, and mostly mortar mixers, in this country. We know nothing of it today at all.

Now then, in connection with this test that the Bureau of Standards has made, there is one elemental feature that enters into that, that I think ought to be worked out, if not by somebody, then at least by the Bureau of Standards. You have asked, and Mr. Howard has intimated as to how that pier was made up, the character of the construction. He says that it is in accordance with—how do you express it—the ordinary work that goes on in the cities, about what you might expect?

MR. HOWARD: We think the ordinary work does not reach results which are equal to that which we have attained in our pier.

WILL C. BLAIR: That is to say, the masonry work that was performed, both that of the quality of the mortar and the manner and method in which it was spread, and to the extent it was spread over the area of the brick, and the best that you can say and the best that anyone can say and the best that can be said in the Unit-

ed States approaching an accurate data is that it is about such work as you generally find in this city or that city; but we should have some data by which the work would be described involving the method and the amount and preparation of the mortar, and the amount spread between the brick, and incidentally the strength of the brick, because the strength of your pier is measured by the strength and manner and method in which it is laid up, and the strength of the brick.

Now, how can you tell what is the worth of the brick that is in use in this country unless you know absolutely the data from which you base your figures? They are not in the engineering books at all, and no man knows; and I tell you that we ought to know.

If we had that much, I believe that the result would be that by the use of vitrified brick, I could build the strongest bridge in the world. I could build it now, but I cannot prove it. I believe that a better bridge can be built out of vitrified brick than by the use of any other material in this world.

MR. ITTNER: I think you could, Mr. Blair. (Applause.)

Mr. President, with all the discussion that has been had there is one feature that has not been brought out, and as to that feature I desire to ask a question. I wish to put the question to Mr. Howard if he has thought, or if he can give an explanation of why both of these piers that were crushed were not crushed completely, but that just one side of each pier was crushed out, while the outside portion and the upper portion still remained. If he cannot give us an explanation I may be able to do so myself; but I want to hear from Mr. Howard first.

WILLIAM P. BLAIR: The modest man to my right here just stepped over a moment ago and says: "Why in the world don't you offer your suggestion as a Resolution?"

ANTHONY ITTNER: At the end of the discussion.

A MEMBER: Write out the Resolution now before he answers the question.

WILL P. BLAIR: All right, I will.

Blames Testing Machine for Irregularity.

MR. HOWARD: In regard to the failure being more pronounced on one side than the other, I think that is attributable to the action of the testing machine itself, the parallel supports there, but the manner of failure is such that the breaking of the pier into large longitudinal cracks. I rather think the question of chance is such that it comes into play there in a measure. One place will perhaps have a little more compressibility and the destruction and the break in the transverse direction be a little more pronounced there; and the ends of the piers they are held against lateral expansion by frictional contact between the solid cast iron heads of the testing machine. Now, when a load of compression is applied, there would be in a uniform material a uniform expansion laterally as well as end-wise, but that is resisted by the rigid columns of the testing machine, and we don't get that effect at the ends which we do along the middle of the length of the pier. I think the shape, the pyramid-

THE BRICKMAKER'S MART

The Classified Advertising pages of "Brick and Clay Record" are the clearing house for the brickmaker. Have you ever taken advantage of this opportunity?

ical shape of the cones, the points facing each other, is in consequence of the end friction to a considerable degree. Cubes of stone develop that same type of fracture which is witnessed in a degree in the piers themselves, but the first manifestation of destruction is a longitudinal seam extending from alternate courses, and abreast the end joints of the intermedite courses.

ANTHONY ITTNER: Before Mr. Howard takes his seat, I want to put to him another question; I would like to know if he knows himself whether these piers were built by one mason, one bricklayer, or by more than one?

MR. HOWARD: One man laid the work right through from start to finish.

ANTHONY ITTNER: Of course, the point I have, the idea I have in asking these questions, Mr. President, was this: That if there had been two bricklayers, one working on one side of the pier and one on the other side of the pier, the method of the workmanship of the two may have been so different, one may have laid his brick so much more solidly in the cement mortar than the other one, that that would have caused one side of the pier to collapse and the other side to remain.

Then another idea I had that if this testing machine had not been very carefully kept, and the top of the pier kept perfectly level and the pressure brought down on every square inch of the pier absolutely uniformly, that might also have caused this collapsing of one side while the other side remained; but my opinion is that a pier built up by one mason and properly built and the top kept perfectly level, and a pressure brought on that pier on every square inch, just the same as it was on any other square inch, that that pier could never have been crushed in that way; but that pier would necessary crush down in a body and not one-half of it fly out from the other side.

MR. HOWARD: In regard to the method of laying the courses, each course was carried up substantially level. The pier was laid in the testing machine itself, and the top leveled off and faced with cement mortar, and imbedded by a slight pressure being applied to the end of the pier immediately following the completion of the last course, and it was allowed to set in that position. It was a matter of subsequent adjustment to give a uniform distribution over the ends, but we provided for that at the time of laying the pier by spreading mortar over the top and applying a slight pressure to imbed the pier very firmly.

I am of the same opinion as that of Mr. Ittner in respect to the difference in the workmanship from different masons, and had it been laid up in that way I should think that would have one of those same kind of manifestations; but our observations on the compressibility of the material as shown by one of the diagrams exhibited here, where the mean curve of compression which was measured in ten different places was not very great from a maximum and the minimum compression, and it showed that at the early stages and up to some four hundred pounds pressure per square inch the compressibility was not very different on one side than the other, but that does not tell us the whole story, because there is considerable rigidity in the machine itself.

Has Faith in Properly Laid Brick.

ANTHONY ITTNER: Just one moment, Mr. President. I want to make a statement now, an independent statement on my own responsibility.

If Mr. Howard will call on me to build a pier to crush,

and he bring his pressure down uniformly, he won't crush that pier either outside or inside with that machine. (Applause.)

PROF. ORTON: Mr. President, may I ask another question?

PRESIDENT ROGERS: Yes, sir.

PROF. ORTON: Major Howard, how large a pier would it be possible for you to test if it was shipped in to you and placed in position in the machine, you could hardly get one so big as this, I take it?

MR. HOWARD: The size of the pier which we could handle would be limited by the transportation facilities only. We have a crane there, of 20 tons capacity, and we could handle a pier of the same size as that shown, 13 tons weight, but I don't know whether we should be very successful in getting a pier forwarded. However, piers can be shipped with great safety by laying them, starting with a bed plate and laying the pier up and then put your cap plate on and secure them by side rods with turn buckles to put the material under initial pressure. a very few pounds pressure per square inch is quite sufficient to give security to the shipment of the material, so it would really depend on how large the piers were made up to ship; we would not be limited by any ordinary consideration.

PROF. ORTON: I am not asking these questions idly, but with a purpose. I had in mind a number of individuals in different localities building piers, taking the responsibility and the initiative in the matter and securing piers built according to specifications made by Major Howard as to size and method of shipment and so on; trying to secure piers representing the local material and the average mechanical skill of the masons of the district; and then would it be possible Major Howard, for the Bureau of Standards to undertake the test of a number of such piers if they were sent in to the department laboratory during the coming year, so that we could have not only the results of the carefully prepared test as made by you, but a test under such conditions of material and workmanship as the country really has to deal with?

MR. HOWARD: The idea impresses me with very great force indeed; and I know the Bureau would cordially endorse this suggestion that Prof. Orton has made. The Bureau is certainly in a position to see that such work can be done, and it will be done if the material is provided.

ANTHONY ITTNER: Mr. President, just one moment, with reference to Mr. Blair and his remarks. I want to tell him something about that.

WILL P. BLAIR: Tell me.

ANTHONY ITTNER: I want to tell you why you have not got the data that you speak of in the matter of brick construction, and that is, because it was never necessary (applause). Brick construction was always deemed sufficient, and now listen, Mr. Blair.

WILL P. BLAIR: I did not hear what you said, Mr. Ittner.

ANTHONY ITTNER: I say that brick and brick construction since time began have been so sufficient for the purposes for which they were used in all their forms, that the thought never occurred to anyone to get a test, you understand.

Now then, I want to say as to that arch that you spoke of, that you built, that 30-foot arch, with your vitrified brick, and I take it for granted that in the construction of that arch the cement that was used was just as good as your brick, and I know your brick are good, because

I have seen them in the streets and lying loosely around ready to be put in.

If that arch was built, as I say, with proper workmanship and material throughout as compared to your vitrified brick which was put into the arch, and the abutments would not give way, that arch would sustain the Eiffel Tower.

Bemoans Lack of Real Data.

WILL P. BLAIR: Mr. President, all that Mr. Ittner says is true, and perhaps if something else had not come on to the stage of action in this country, why, the thing would have gone on unquestionably; but now here comes in a material which opposes commercially the use of brick, and they test great piers of it, they test the strength and strain of girders and beams and arches and everything of that kind in cement. They have got an array of figures that is really astounding. We have got none. All we can say is what Mr. Ittner says.

ANTHONY ITTNER: Well, that is enough.

WILL P. BLAIR: It will hold up the Eiffel Tower, but we cannot say how much the darned thing weighs.

Now, I think that this is a subject that perhaps in a way should be left to the technical investigating committee, and that they should take this thing up and look at it and all that sort of thing, but I think that the influence of this society ought to be directed, and its influence ought to go to the support, not only of the work and the approval of the work that the Bureau of Standards has done thus far, but the influence of this society ought to go to its enlargement, both in equipment and in the paraphernalia necessary to secure this data, and we ought to aid in securing whatever help is necessary to do it.

Why, the little trifling amount of money that is expended by the Bureau of Standards for the benefit of the clay industry in this country, when you come to compare it with the civilization of the country and what it means, it is simply ridiculous. Why, they are spending about a mill in comparison with a thousand dollars or two thousand dollars in other bureaus that are not half so important as this.

Now, I am ready to offer this Resolution; maybe it is not worded just exactly as it should be, but I will offer it:

Resolved, That the National Brick Manufacturers' Association endorse and approve the work of the Bureau of Standards thus far in the tests made of the stresses and strains of brick work in use; but we strongly urge that this work be enlarged sufficiently to furnish accurate data as to the strength of such work under stress and strains with various qualities of brick, as well as quality of mortar and various materials, and its ability to support compression and the stresses and strains to which it may be respectively submitted.

CHARLES J. DECKMAN: I move the adoption of the resolution.

PROF. ORTON: I would like to suggest the insertion there of a phrase touching on the quality of workmanship as well as the quality of material; because it seems to me that right there is one of the weakest points about our brick construction.

WILL P. BLAIR: That suggestion is a good way to cover my idea. I thank you for the suggestion.

C. P. MAYER: I think that this matter should properly go before the Committee on Resolutions; and I would suggest that they retire, and Mr. Blair go with them, and they may fix this up the way they want it.

WILL P. BLAIR: I would like Prof. Orton also with us.

FRED TALBOT: I came in a little late and I heard Mr. Blair speak about building bridges of brick. Now, that is a very common practice; I have seen lots of viaducts built of blue Staffordshire brick. One in particular has a span—the largest arches, the highest arch would be 25 feet with about a 50-foot span. I believe that we could get the data of this bridge or viaduct from the British Western Engineers. I think Mr. Rogers has seen that himself. It is a very common practice to build of the blue Staffordshire brick; it is a very hard and durable metallic brick.

Leipsig Bridges Made of Brick.

R. C. PENFIELD: Mr. President, I want to add one word to what has been said. You will find around Leipsig bridges and elevated structures, similar to what we see built of cement in this country, built out of brick, right in the home of cement. Five or six years ago I noticed particularly a large amount of brick work, viaduct work, used in elevating the tracks in and around Leipsig. I noticed that right in the land of cement they are actually using brick for that purpose.

Now, I want to add one word about the discussion. I don't know what range it has taken, but I have had it in mind that the brick manufacturers of this country seem to be very deficient in having a manual on brick work. The iron people have their manual, and you can get all kinds of information out of it, if a man wants to build a building, he knows where he can go and get the information; but if a man wants to build a fine structure of brick, he hunts around but he cannot find it.

MR. ITTNER: We have nothing to write one on.

R. C. PENFIELD: There is a great deal to write on, and there are enough men in this country who can figure it out and give us much more accurate information than is now available. You would be perfectly surprised to see what could be done in getting the data; besides, we can go to the Bureau of Standards as a basis for our tests. It is easy to figure these things out; they have to be figured out, but one man may figure it out on a basis of five to one, another ten to one, and another perhaps of 50 or 100 to one.

WILL P. BLAIR: I want to correct you on one line; that is what we are trying to get; we absolutely have no data.

R. C. PENFIELD: I say you have none, I say you have no data; but I say you ought to get busy and get the data.

ANTHONY ITTNER: Mr. Blair is proceeding in that way.

R. C. PENFIELD: I am only saying that we have no data, but I claim that we ought to have a book for the brick manufacturer as they have in the other lines.

ANTHONY ITTNER: I don't want any myself.

R. C. PENFIELD: If everybody knew as much about brick work as you do, Mr. Ittner, they would not need it. If you have not got that information you have no possibility of going out and competing with the cement industry.

WILL P. BLAIR: We have not got that.

ARE YOU LOOKING

for a real bargain in a second-hand machine?
Read the offers in the Classified Advertising pages.

R. C. PENFIELD: Then the quicker you get it, the better you will be off.

ANTHONY ITTNER: Now bear with me just one moment. This discussion is very good, proper and necessary, but I want to add a clincher to what I said, and that is with regard to Mr. Howard's testing machine in Pittsburgh. He informed me that the piers that they crushed there, or endeavored to crush, or crushed a little slice out of them, were four feet square. Now, if I will be permitted to go to Washington or Pittsburgh or wherever this testing laboratory is, and build a brick pier, selecting my own brick, selecting my own mortar, lay the brick with my own hands, his testing machine would never be able to feaze it if it was two, three or four times as powerful as it is. That is what I wanted to add, and that is what I want put in the record.

Urges Prompt Action With Bureau.

MARION BLAIR: Such a resolution as the one proposed, printed in the proceedings of this Association, without any further action would do but little good.

But that resolution in a telegram to the director of the Bureau of Standards will get on his desk and be read and will cost about a dollar. I suggest such a resolution as that be put in the form of a telegram and be sent personally to the director of the Bureau of Standards.

PROF. ORTON: Along that line I want to assure Mr. Blair, and the other gentlemen, that the Bureau of Standards is wide awake, and any communication from this association is going to receive prompt attention from Mr. Stanton. He and his subordinates are thoroughly keyed up to do what this association desires them to do within the range of their ability and department. I ought to say that we have a splendid course; I mean that the Bureau of Standards is thoroughly in earnest and desires to help this association. I mean that if this resolution goes to the Bureau of Standards in the regular channel it will receive very careful attention.

MR. HUMMERT: I am heartily in favor of the resolution. The government is with us, but it seems that they are kind of standing back of the curtain. The reason I say that, in our city in Adams County, Illinois, they needed an addition to the post office, and they wanted to make a good, permanent job of it, and if they could not get the proper material there they would go elsewhere to get it, whether it was brick or anything else. A man came out to my yard, I did not know who he was, but he said he wanted samples of brick, and he did not allow me to pick them out either, he went to the piles there himself and picked them out, and six weeks afterwards I heard that he was a government representative, and he said that Quincy had a good material, and he chose brick for this construction, and there were piers in it that had to carry a weight of a two-story building all right enough. Now, therefore, the government is with us, but for some reason or other our competitors in other lines of building material have got those fellows in kind of the front of the curtain and we are back of the curtain.

Therefore, I say, let our strength be shown by passing this resolution.

VICE-PRESIDENT MAYER: The next paper will be "European versus American Methods of Manufacturing Clay Products," illustrated, by G. W. Cronquist, of Torek, Sweden.

(Mr. Cronquist discussed his subject in a most exhaustive manner, showing he has given considerable study to the matter.)

Mr. President and gentlemen:

When your amiable secretary, Mr. Randall, on my visit to Indianapolis, a fortnight ago, made me promise to read a paper here and gave me the title "European Versus American Methods of Manufacturing Clay Products," I must confess that I could not just understand what was required, depending upon my unfamiliarity with English.

Having only been in the United States three months and seen only 30 American brick plants in eight of your 40 or more states, it is impossible that my impressions from these yards will justify me in passing judgment on the whole brick industry of this enormously large continent.

I must at first state this fact, knowing how easy one makes errors by judging the whole industry from a small part of it.

I know from my 15 years' practical experience in the clay industries in different European countries that you must know at first very well the raw materials before you can make any satisfactory conclusions. As the raw materials, however, are not of the same character here and in Europe, I prefer not to make any criticism. I will call your attention, however, to some methods in brick and tile making, which I have not seen used here and will thereafter make some remarks about general improvements which I believe might be made or at least tested.

The raw materials in Europe are, on the average, the glacial surface clay and are, therefore, better adapted for drying and for the right temperature in burning than the excellent shales you seem to use here in great quantities. The glacial clay, for instance, can not be treated by the dry press method to any advantage. The stiff mud, wire-cut machines are the ones in use most generally. The mud, however, is not as stiff as I have observed here. This means we do not use so much power per ton of brick and, of course, our augers do not, therefore, have to be so heavy as yours.

A recent German invention or process announced, I think, about five years ago, is that of Mr. B. Balg Gorlotz Seleda. It is for making hollow tiles, closed at both ends, on an ordinary auger machine.

Picture No. 1 (see accompanying illustration) shows sections of a ribbon of clay. The upper part is that of an ordinary die for hollow tile. In the middle one are two dampers of $\frac{1}{4}$ inch sheet iron in the front of the cores. To prevent the damper going too far there is a key fastened on the cores. The clay is forced forward by the auger and must fill up the air space between dampers and cores.

If the dampers are open the ribbon moves forward and a vertical wall is produced. By alternating the shutting and opening of the dampers and cutting the string on the produced vertical walls, you get hollow tile closed on both ends (as a box).

Picture No. 2 shows such a machine at work. The cutting table is connected with the shutting arrangement of the dampers governed by a wheel and shaft, belt driven from above.

The advantages of these blocks is in their greater crushing strength, better insulation and no wasted mortar by walling in.

Of course it takes a little more power to produce 1,000 such tile than to produce 1,000 ordinary tile of the same size, and the auger cannot run so fast. It also lessens the capacity of the press about 10 per cent.

I will now show the most common system for brick-drying in Sweden.

In Picture No. 3 is a section of a perspective drawing of a Swedish plant. You can see on the ground floor the man at the cutting table. He puts the brick on the elevator. This consists of two chains moving—inside up and outside down. Between the two inside chains the pallets are laid, resting upon small iron plates fastened to the chain.

The whole column of brick on these pallets is moving upwards, and stops automatically when it reaches the point where it is to be taken off by the automatic transportation truck. Ten arms of forged iron are put underneath the set of pallets and raised by means of a lever. The whole is then pushed backwards to the outer wall alongside which the transfer track runs.

Picture No. 4 shows how the automatic truck is pushed into the dryer and there emptied by lowering the iron arms by means of raising the lever. The dryer is built above the kiln and the brick are dried by radiating heat from the ware and by the open air. When dry the brick (see Picture No. 5) are lowered by an inverted chain elevator that stops for every set of five pallets. The pallets are taken on a truck with five pallets on each side and moved into the kiln. The truck must be low enough to get through the kiln doors.

By this system the brick are not touched by hand from fresh cut until dried and set in the kiln.

Picture No. 6 shows the exterior view of a Swedish brick yard. The system was constructed by Andrew Anderson, Veristad, Svedala, Sweden. The yard contains two continuous kilns under one roof and produces about 15,000,000 brick.

The size of the Swedish brick is greater than yours, varying from 3x6x12 inches to 2½x5x10 inches. That is one reason why such a big plant does not produce more. Another reason is that we can't run the whole year 'round. We must stop in October or November and not start until April or May. The winter is so severe the wet surface clay is frozen to ice in the clay pit or will freeze on the way to the machine. The radiating heat from the kiln is not enough to keep out yard-frost, especially when windy.

The burning of brick is done entirely in Europe in continuous tunnel kilns, and these are so well known by all of you that I have no reason to describe them. They are a little, but not much more, expensive to build than the periodical kilns. The fuel is much more expensive there than here; the labor, however, not so expensive. You get one ton of coal here for the price of one workman's day's work (in some districts for the price of half a day's work), but in Sweden, for instance, we pay five workmen for one day for what we pay for one ton of coal. That is the reason why we must save coal, and you save laborers.

Very often I have observed in England, that the kilns (continuous and periodical) are painted with coal tar. That is to prevent the air penetrating the brick walls. I believe that is good and could with advantage be used here, too.

Picture No. 7 is the plan of Brother Vetter's great roofing tile factory in Yiehlachen, South Germany, constructed by Jac. Buhrer, Constanz, Germany. In the three kilns are burned an average per year of 30,000,000 roofing tile and 6,000,000 common brick. The kilns—Buhrer kilns—are made after the zig-zag principle with a very long burning canal. This moves the fire very fast. It advances about 100 feet in two and one-fourth hours. The draught must be enormous and is produced by heavy fans. The waste heat (from cooling brick) is drawn by fans from the kilns and forced through the chamber dryers. The combustion gases are used for drying off the common brick in a tunnel dryer seen in the center of the picture.

Picture No. 8 shows sections of up-draught continuous kilns, perhaps not so well known here. I have seen these gas-fired, but not with direct fire. The coal is dropped down from the top of the kiln and burned in special fireboxes—either on one side of the chamber, as the upper picture shows for small kilns, or on both sides for bigger kilns. I believe these could be used here for paving brick burning.

The constructor is Otto Bock, Berlin, Germany. He was, I think, the first to introduce the continuous kilns built below the surface of the ground fifteen years ago, and these kilns are yet running economically and without any repairs to mention.

Picture No. 9 shows sections of one of these kilns, the first with the dryer above the kiln, the second on both sides of the kiln. These kilns are cheaper to build. The earth must, however, be very carefully drained before excavation. It is, if correctly built, very cheap to run. You can build it with all the flues that are in a modern continuous kiln for watersmoking, or hot air from the cooling zone, etc.

Picture No. 6 is a view of one of these small kilns showing the setting. You can see how the bricks are covered with two flat brick and 6 inches to 8 inches of clay or sand. This kiln I would recommend especially as relatively cheap to build, and here you can use the well-known electrical setting machine used here around Chicago. The kiln is now built, I have heard, for a capacity of 150,000 brick a day.

From the yard, where tile are made, you always will get more or less waste. One plant I saw in South Germany used this waste for making flue linings. Director Schofer, the inventor, found that no material is so good for stacks as brick or concrete made of ground brick or tile and cement. It insulates very well and is not sensible to varying temperatures.

Picture No. 14 illustrates some block and an ordinary brick stack. There are three blocks instead of 84 brick with all the mortar joints that make leakage.

A few remarks and I will close.

The price of fuel seems to be of interest here as in Europe. That may cause the American brick and tile yards to consider coal saving. In the ordinary up-draught kilns you only use about 20 or 25 per cent of the fuel. In a continuous kiln you can take care of 40 to 60 per cent of it, and yet more, if you will utilize the heat in the cooling brick and the radiating

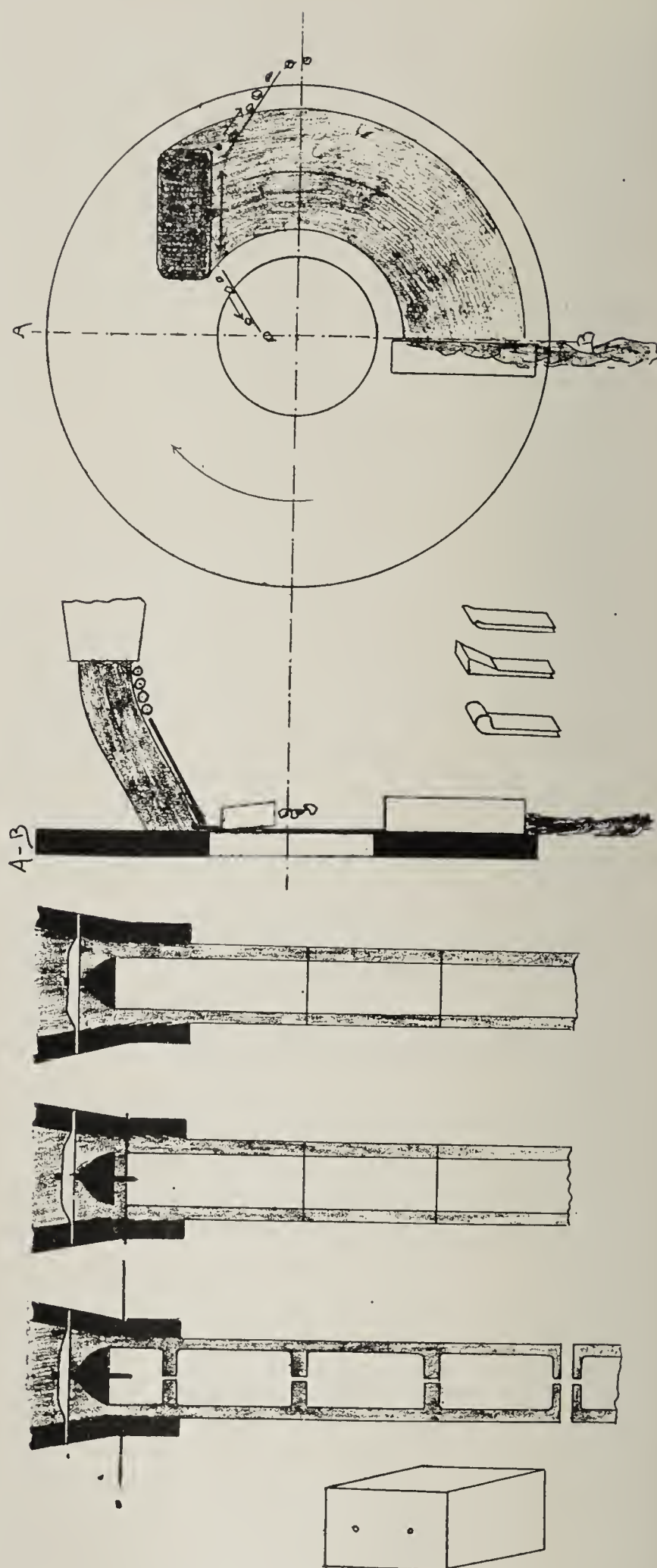


Figure 1. These sketches show the column of clay referred to in Mr. Cronquist's paper.

heat from the kiln. I think, therefore, that the up-to-date American brick yard must earnestly take into consideration the continuous kiln as a necessary part of the yard. You may at the same time save labor by using automatic setting machines. As fuel you have natural gas, oil and coal. The two first are getting more scarce, and you have to find compensation for them in something else. I think you will find it in the producer gas and coal dust. I mean the flame made by blowing very fine ground coal (flour fine) with air into the kiln. You can regulate the heat as well with this burning as with gas or oil, and I don't think you will have much trouble with

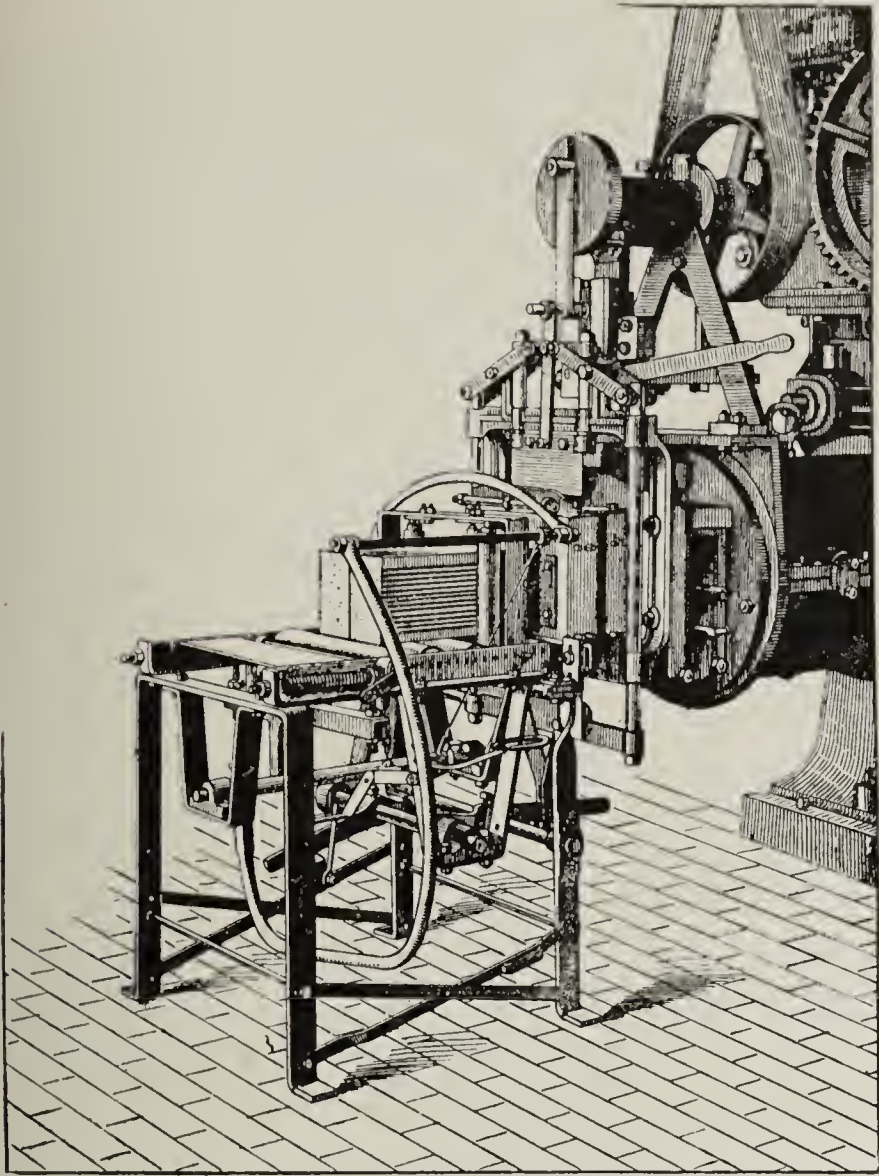


Figure 2. View of the machine used in Europe to make close-end tile.

your ashes as your good coals contain but about 5 per cent..

With producer gas you lose about 30 per cent of your heat in the gas producer—a loss you don't have by burning with coal dust.

In a small town in Denmark the city waste—ashes, garbage and sweepings—is dried and screened and used in a gas producer for producing gas and by the gas there is produced electric power enough for illuminating the whole town. I only know of one American town where this waste is really taken care of. It would, perhaps, be a possibility to sort it and produce gas of it for burning clay products. The ashes are often heavy with hydrate of lime and may be used as mortar or pressed into brick for inside purposes.

In London the city waste is, after screening, mixed into the softened mass out of which the common stack brick are made and these are burned by the overflow waste from the screen in

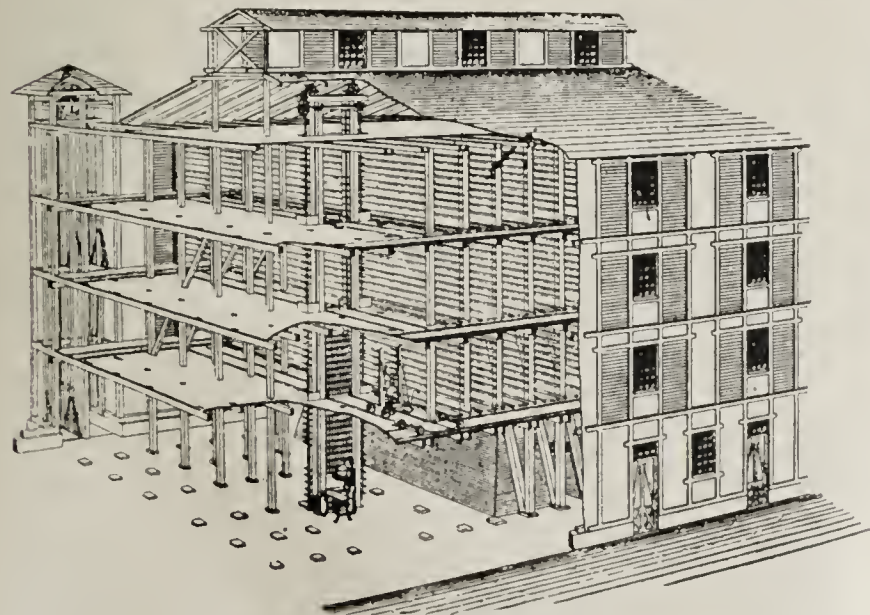


Figure 3.



Figure 4.

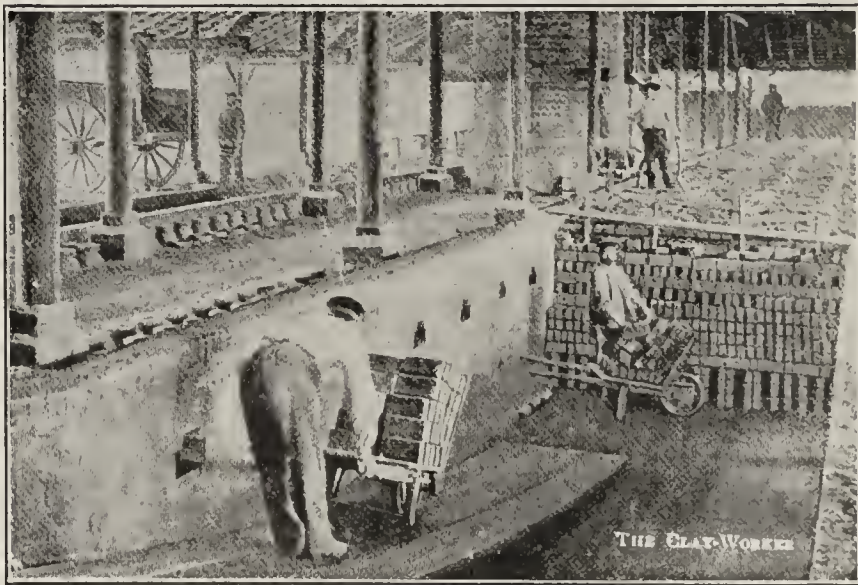


Figure 5.

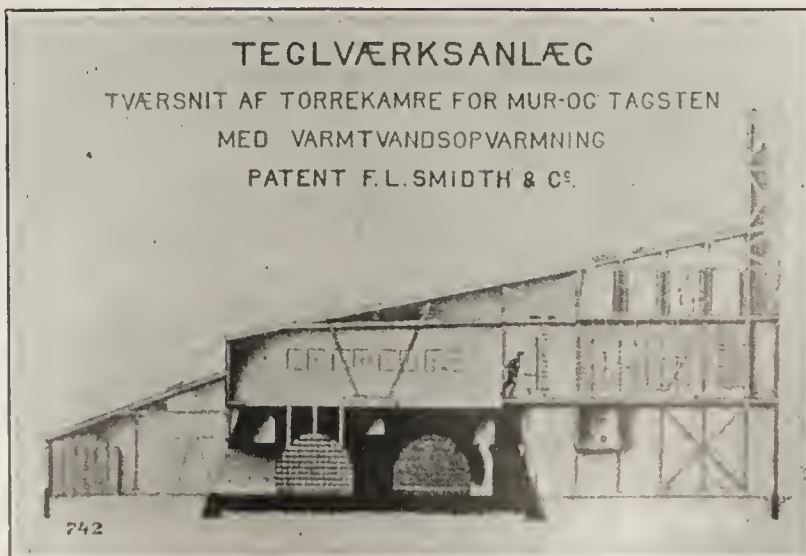


Figure 6.

big clamp kilns to a very good yellow brick that you may use for facing purpose. There is more value in the city waste than you think.

When I first studied the map of America this side the Atlantic ocean, I thought that no country was by nature so favored for making a good and cheap waterway, and yet I have not seen much of it. For such cheap products as brick it is necessary to obtain the cheapest possible freight rates. I know it is to the interests of this Association to push the brick business.

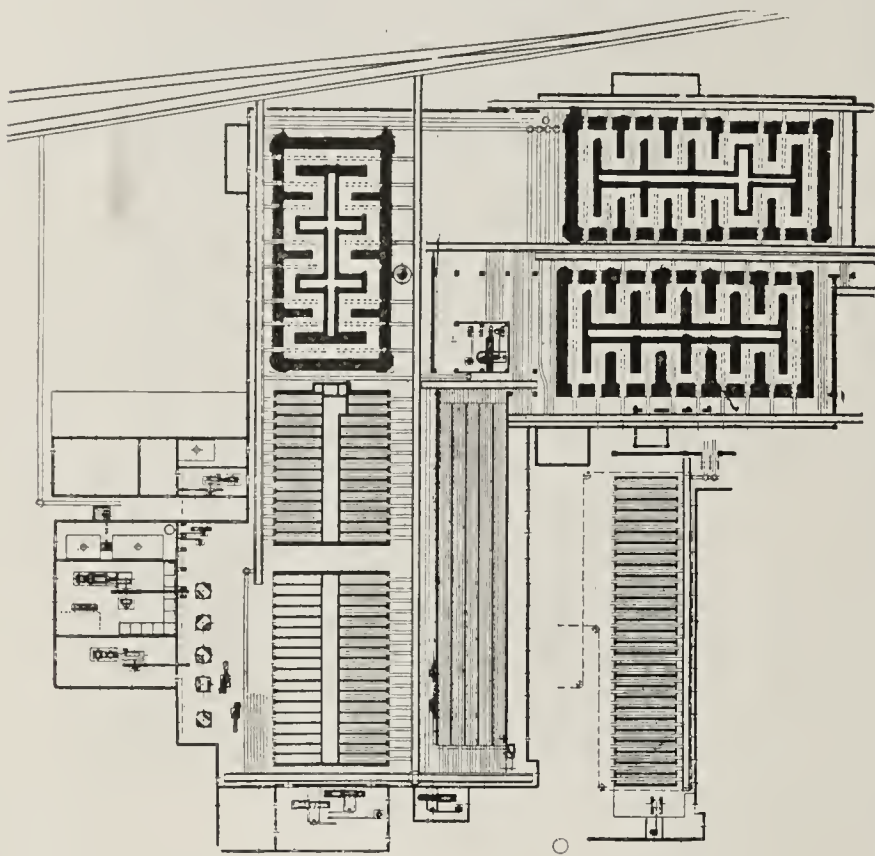


Figure 7.

You have to ship very often long distances away from the yard by rail. The brick become too expensive then. In the interest of the brick industry, and the building people you must, therefore, get the cheapest possible transportation, and that is the waterways in such countries as yours.

VICE-PRESIDENT DECKMAN: Mr. Cronquist, I assure you that the members of this association appreciate most highly your valuable paper and no doubt will bene-

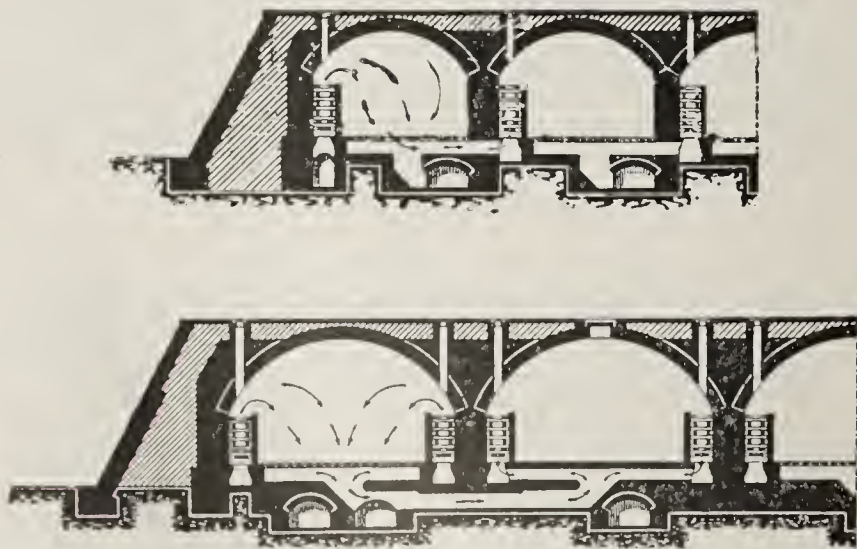


Figure 8.

fit by it. I take it that there is no disposition on the part of our membership to discuss this paper, but if any of you have any questions that you would care to ask Mr. Cronquist, I presume that he would be glad to answer them.

MR. CRONQUIST: With pleasure.

VICE-PRESIDENT DECKMAN: With pleasure, he says.

Asks Capacity of Hollow Tile Machine.

FRED TALBOT: With reference to that hollow tile he showed there, I would like to ask him if he has any figures on how much he can make a day; I suppose they were about 8 by 12 inches.

MR. CRONQUIST: On one machine I see they made 7,000 without this and 6,300 with this, with closed ends, and the size of the hollow tile is 12 by 12 by 6 or 8, I don't remember that.

THOMAS KENNEDY: I would like to ask, can you get a first-class color face brick in those continuous kilns in the old country?

MR. CRONQUIST: Yes, we do; I never have any trouble with them. But if you do not know a continuous kiln you cannot get any good ware out of it, but if you know the advantages of the continuous kiln you can take the ware, from one end of the kiln and dry it, you can put in at the other end your green bricks, in your continuous kiln, and you can take the dry, hot air from the cooling end of the kiln and dry these bricks where they are in the continuous kiln before burning, and get no scum.

MR. HUMMERT: Have you ever burned any kiln yourself?

MR. CRONQUIST: Oh, yes, I have.

VICE-PRESIDENT DECKMAN: Any other questions? We still have one more paper, No. 15. It is: "Kiln Troubles and Remedies," a general discussion led by Anton Vogt of Kansas.

SECRETARY RANDALL: Mr. Vogt is present, gentlemen, but has put his discussion in the form of a paper, and like our friend from Sweden, his English is a little broken, and that is the reason he wants me to read this paper. Are you still in that mind, Mr. Vogt? Do you want me to read this paper?

MR. ANTON VOGT: Yes, if you please.

SECRETARY RANDALL: Very well.

To begin the subject, we repeat what hundreds of clayworkers have said many times and many of you assembled here today have, no doubt, said the same thing: We have no trouble at all, everything works just fine; it couldn't run any better, until we come to the kilns—then our troubles begin. Our loss is mostly in the kilns, and many of you keep on losing money, hoping that next time the kiln will show better results. But the next time better results never come.

For any loss in a kiln there is a cause, a reason, and a remedy.

"We have," say many clayworkers, "trouble with our brick whitewashing." "Our tile," says another, "don't look good, on account of the whitewash. They are hard, but they do not look as nice as those of our competitor, the Clean Red Tile Co., at Remedy City, Chemical County, State of Carbonate of Barytes."

"Our sewer pipe," complains another, "would sell better and look better if they were better glazed. They have a body that can't be beat, they ring like a piece of steel, but they show the whitewash and finger marks under the glaze. The glaze is not bright; it's dirty, rusty and not uniform. We have to burn too hard to get a flash over the whitewash, or something like a glaze. We have to force it on it with a low damper, and often we have a good many crippled or crooked pipe, or out of shape on top and around the bags."

There is no more gratification to a brickmaker than to see clean red brick, without whitewash, when opening a kiln, and no more uglier sight than a kiln of whitewashed brick and tile, or a kiln of sewer pipe, with only a little something like a glaze on the top pipes.

Scum is the thin coating of whitewash that shows on the ware as it is taken out of the kilns, and efflorescence is the white, flaky, crystalline stuff that forms on brick after they are laid in the wall. These defects have in the last few years been well threshed out in the clay journals by practical and technical men, and their cause and prevention are now well understood.

Chemistry, through many experiments, practically has solved the problem of overcoming whitewash on clay ware, and it costs but a few cents per ton of clay. It does not take long to find out how much of the neutralizing chemicals it requires. After

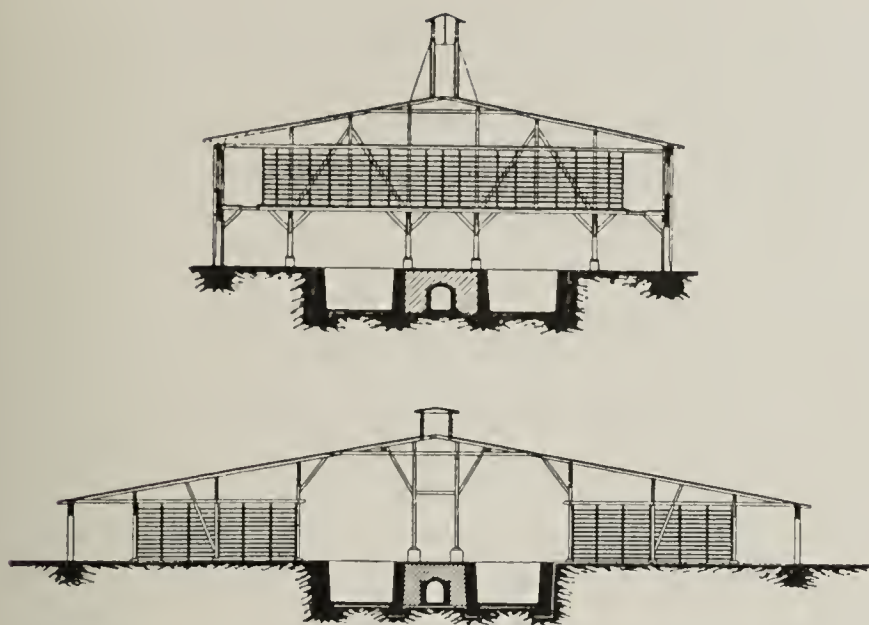


Figure 9. Two types of kilns referred to in Mr. Cronquist's paper.

a few painstaking experiments we know about how much to use for our particular clay. The only way to eliminate the trouble is to GO AT IT, and keep a memorandum of what we do, so we can repeat it.

Lays Most of Blame to Fuel.

Kilns with sluggish draft, and kind of fuel used, are often the cause of ware scumming in the kiln, and much more so if the kiln has not enough draft. Also coal that has been in the weather and got wet may bring on the trouble.

We can take a clay that whitewashes badly with coal firing and the same clay, watersmoked with gas, will not whitewash, or at least very little. Take the same clay and watersmoke with oil, atomized with steam, and it will whitewash badly. Why? Because, in watersmoking, we aim to evaporate the water remaining in the ware, taken from the drier, and in atomizing the oil with steam we introduce exactly what we are trying to get rid of, moisture. We introduce it into the kiln in the form of steam, with which we atomize the oil.

Therefore, it is more economical to use compressed air as an atomizer in oil burning. Those who have used both methods will agree with me.

We add to our repeated claims that a perforated kiln bottom will watersmoke a kiln of brick or tile in a shorter time than a solid bottom kiln; not only this, with proper firing we will eliminate most, if not all, of the whitewash.

My way of interpretation of proper firing in watersmoking is: Do not stir up the fires, but let the coal burn out to live coal. It is the heat of the live coal that dries out the ware in the kiln, not the soot of a smoky fire. We cannot more than dry out the ware in the kiln, and no rushing or forcing of the fires will shorten the time. It will only soot the kiln and retard the watersmoking by obstructing the draft. The coal needs no stirring up, but if a coal is used that cakes bad, it may be lifted up lightly, so the air will get through it. The fires always draw, or burn more rapidly, as soon as the kiln warms up and the stack gets warm. It's a natural law, found in practice, that a warm stack draws the moisture in the kiln more rapidly than a cold stack, and therefore it's a good thing to have an auxiliary furnace at the stack, warming the air in the stack, some time before we start the fires in the kiln, and keep it going during watersmoking. The fuel consumed for this purpose brings profitable returns, and it is not only a matter of economy, but also of common sense.

After drying out the ware (I do not like the term "watersmoking") we are confronted with the OXIDATION of the clay.

Oxidation simply means that we have to give air over the fires to reach the clay, to cause the carbon in the clay to burn and expel it, before the outside of the ware vitrifies or the pores of the clay ware are closed, confining the carbon. We do not care to quote any phrases that the average kiln-burner does not understand, we do not care or undertake to find out how much carbonic acid gas escapes through the stack.

We do not object to scientific books with formulas on these subjects, but in order to obtain the highest efficiency of the fuel we admit more or less air to the kiln, as required. We, from practical experience, after firing up a kiln of pavers, or any kind of shale brick, or pipe or tile, watch the stack and if the black smoke rolls out in heavy clouds, during oxidation, we go around the kiln and punch a hole over the coal in the fire hole. What for? To let air in the fire holes and to burn up part of the smoke, thus creating oxidizing conditions, tempering the heat with that air, preventing too early vitrification and consequent closing the pores of the ware. This is so, because when this occurs the carbon left thus confined in the clay

flashes into flame, and as long as there is any carbon left in the clay, the iron remains in the ferrous state, and when the temperature is high enough the ferrous iron combines with the silica in the clay and forms ferrous silicate, and the range between incipient vitrification and real vitrification and fusing is often so close, that this ferrous silicate suddenly vitrifies and fuses; carbonic acid or carbon monoxide is formed, causing a pressure which bloats the brick, tile or pipe, and we have a blue-black core or a spongy center.

Therefore a burner that knows his business when heating up a kiln fires light and gives air over the fires, until the heat shows plain on the bottom of the kiln, that is, as long as we see a bluish vapor, the product of burning carbon, coming out of the stack. We fire light, we fire open, letting air into the kiln. We prevent reducing conditions and then, when we consider the kiln safe, we fire heavier, at longer intervals, to start the settle, and the result, the fruit of our labor, will be a good kiln of burned clay.

Warns About Overdoing the Firing.

We must not overdo things, we must use judgment when to stop. Many burners can't stop in time—they want to get the kiln too good, and there it is where many fall down, they can't leave good enough alone, especially with a clay that has a narrow range between vitrification and fusing or getting out of shape. It burns plenty hard enough for all purposes at a certain degree of heat, but if we continue a few fires longer, we may find, on emptying the kiln, that a great deal of the ware is ruined and the damage has been done in a few fires too many.

To describe or suggest a universal remedy for everyday burning troubles, fitting all cases, would be an undertaking as difficult as describing and suggesting universal remedies for everyday troubles or diseases of humanity. It is practically impossible. For both ailing classes we have doctors and specialists. For special cases men who, after many years through diligent study and application of different remedies in practice, have gained the knowledge of successfully treating the different ailments. Although far advanced, as compared with twenty or ten years ago, there are still in the medical profession, as well as among the kiln doctors, many quacks and experimenters who exploit the people, and so we often have to change doctors until we find one who has a reputation of having treated similar troubles with success in a remarkably short time somewhere else.

Sick people, as well as clayworkers in trouble, often are very stubborn patients. They quit after taking a few doses of the medicine prescribed and consult another doctor, or often seek advice and help in the question and answer column in a newspaper or trade journals, where specialists are engaged for that purpose, and where such advice is free to the inquirer. They expect to get rid of their troubles in a day or a week, when it often has taken months to develop. That is unreasonable and such patients generally cannot be cured. They get worse, for they try too many remedies, the nature of which interferes with each other. It is not a fair test and they give up, and, of course, as a matter of course find an untimely grave or give up the ghost as unsuccessful workers, or rather quitters, in clay.

It is a well known fact that most doctors for some time, and more so every day, are trying to prevent rather than to cure disease. It would, therefore, be well for clayworkers to consult a specialist when laying out a plant and kilns to prevent troubles, or when the first symptom that something is wrong appears.

Many entering the clayworking field have too much confidence that they will succeed, because they were successful in other business. They try to work out everything themselves, without consulting any one that knows from bitter experience. It would be cheaper to spend a few hundred dollars at the start, to find that they are right, than to lose a few thousands to find later that they are wrong.

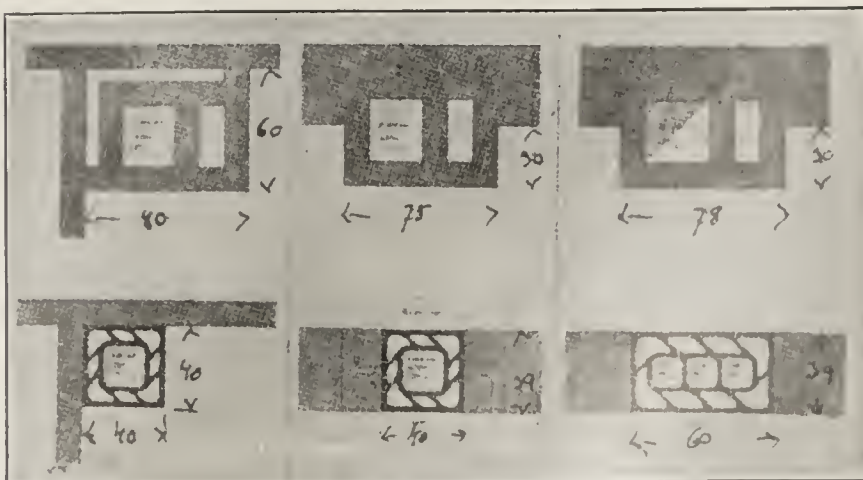


Figure 10. Types of chimney block referred to in Mr. Cronquist's paper.

You know that not one of you clayworkers would install a boiler without a steam gauge and a water glass. You would not run the risk of blowing your boiler up, either with too much steam pressure or not enough water, or both, but many, the largest number of you, run your kilns without any controlling apparatus at all, and you wonder why your kilns explode often in burning and ruin your ware. It is not always the kilns that are to blame for bad results; it's in most cases the failure of controlling the kilns, and you can justly blame yourself for most of your burning troubles. Burning a kiln of any kind of clay ware without a draft gauge is just as much guess work as firing a boiler without a steam or water gauge. We recommend that you have your burners use a portable draft gauge and by keeping records you can exactly find how much draft your clay requires in the oxidation and vitrifying period.

A good many burners of the old (but now out-of-date) school do not care to use a draft gauge, and they look at one who uses one as a fool, but they often fool themselves. They object to any controlling apparatus that enables YOU, as proprietors, to get familiar with YOUR kilns. They cling firmly to the long-ago-exploded whim, that they are "the whole cheese" and that nobody, not even YOU, their EMPLOYERS, shall dig into their secrets in the trade. The writer recalls several instances where old burners got in deep water and had to be helped out and steered clear of rocks and reefs with a compass—the draft gauge.

But no sooner the burning was straightened out when they got stubborn again, adopted their old way, burning up a lot of fuel and running the kilns a couple of days longer than if they had regulated the draft. The draft gauge, however, had been discarded. Such burners simply do not want any one to teach them anything, and YOU pay for their KNOW-ALL, in dollars and cents, which ought to be YOUR profit.

Shows Advantage of Seger Cones.

With the use of Seger cones we can nearly correctly observe how the heat progresses. After we have found what numbers we need for the best results in finishing the kilns, we can surely get more uniform burns than without them. Also here do many burners object to or belittle their use. Do they think that Seger also was a fool or one that invented them for toys of children to play with? Or do they think that Professor Orton, the American Seger, would have ever begun their manufacture if he thought for a moment that they were not a great help to the clayworkers, especially the clay burner?

Electric pyrometers are also a great help and safeguard, enabling one to register the heat progressing every hour, and if out of the way, one way or the other, we know what to do—we can fix the fires accordingly.

Their application eliminates guess work in burning. We do not see how wise clayworkers can get along without one or the other of the controlling apparatus. We admit that there is room for improvement in electric pyrometers, as they do at the present time not record the heat in all parts of the kilns, but only where the elements are. However, there is generally very little difference from other places in the kiln, from where the elements are located, if the kiln is provided with properly constructed flues for uniform distribution of the heat in all parts.

The elements are located between two fire holes, one on top, just below the spring of the crown in down-draft kilns, and one about a foot from the bottom. They can also be introduced through the center hole on top of the kiln, but they could not be placed close to the bottom of the center. This would be a practical impossibility. We can, however, place cones in the center, and when we empty the kiln we can see what cones are down, then comparing the heat recorded on the sides of the kiln at the elements, we can easily see how much heat we had in the center around the cones. Thus we can find out just how far we can advance the heat at the elements to get about the right heat in the center of the kilns, and if we get good results this way, we get a uniform burn in other parts of the kiln.

Do not interpret from the foregoing that electric pyrometers are not reliable, not at all, but may be so, if defective in design, misapplied ignorantly, or used or improperly installed. Then the use of anything, anywhere, any time, will result in the abuse of that thing everywhere, all the time.

Draft gauges, cones and pyrometers do not burn our clay ware. We must regulate the draft. Cones do not burn our ware. We must fire right. Pyrometers do not burn our brick, tile, pipe, pottery or terra cotta. We must fire right. We can burn a kiln fine and dandy where the elements are located, and we can ruin the balance of the kiln if we do not watch and regulate the fires, be it wood, coal gas or oil for fuel.

The draft gauge, the cones and the pyrometers are nothing but instruments by which something is effected, namely, the controlling of burning clay ware. We must control the instruments and not expect that the instruments will do the thinking for us.

We cannot expect that instruments used on our kilns will talk, as the moving pictures that Thomas Edison recently announced do. We have seen in "Boss's" pamphlet that kilns talk, but, believe me, when we hear the draft gauges, cones and pyrometers talk, then a new era will have arrived and we

will hear the horses talk and complain of the inhuman treatment they so often receive; we will hear the cows talk, complaining that the milkers pull out their life blood to get every drop of milk; the hogs will talk and grunt that they are slaughtered as soon as they become fat and that they are killed so dead by the skill of the butchers that they can't even squeal any more; we will hear the chickens talk and charge us with eating first their eggs and then themselves. When this is true, then our controlling apparatus will ring us up at night and tell us that they have enough, that it's getting too hot, and that will be one step in settling the burning question.

VICE-PRESIDENT DECKMAN: Is it the desire of any member to discuss this paper? If not, I presume that Mr. Randall will take great pleasure in answering any questions that you may wish to ask him. Mr. Penfield, have you some questions to ask? There don't seem to be any questions to be asked Mr. Randall on the subject.

SECRETARY RANDALL: Some gentleman asked for information on burning with oil, but, unless he is here to state what feature of oil burning he desires information on, I suppose it would be useless to cover it now; it is too big a question.

VICE-PRESIDENT DECKMAN: He had better ask the Standard Oil people.

SECRETARY RANDALL: This, Mr. President, completes our formal program and brings us to the reports of committees. The first is the report of the Committee on Resolutions.

VICE-PRESIDENT DECKMAN: The Committee on Resolutions will report; Marion W. Blair is the chairman.

The Committee on Resolutions beg leave to make the following report:

Whereas, A Wise and Beneficent Providence has permitted to gather together the members of the National Brick Manufacturers' Association for its twenty-seventh annual convention, and,

Whereas, There has been evident a greater intensity of purpose, a greater spirit of harmony and co-operation than has been present at any of the previous meetings of this Association; therefore be it

Resolved, That the membership of the convention be congratulated upon the spirit of helpfulness and good fellowship that has been displayed throughout these meetings.

Resolved, That the sincere thanks of this convention be extended to those who by the excellent papers prepared and read, to which we have listened with interest and benefit, have advanced materially the knowledge of and interest in the clay-working industry as a whole.

Resolved, That the sincere thanks of this convention be tendered the officials and membership of the Chicago Clay Club, who have done so much to advance the comfort and entertainment of our members, visitors and their friends.

Resolved, That the sincere thanks and congratulations of this convention be extended to the instigators, promoters and executives of the International Clay Products Exposition Co., whose second clay show stands as a second accomplishment in the history of the clayworking fraternity and which can possibly reflect nothing but credit and helpfulness to the entire industry.

Resolved, That to the management of the Congress Hotel and its employes, a sincere vote of thanks be tendered for the most excellent service and the courteous treatment extended to our members during their stay.

Whereas, During the past year the Grim Reaper has taken from our midst a number of our valued members, men prominent in their respective lines of endeavor, and for many years associated directly and indirectly with the clay industry. Among these are Mr. E. R. Frazier, of Chicago, Ill.; Mr. Evans Jones, of Pittsburgh, Pa.; Mr. Albert T. Leach, of Chicago, Ill.; therefore be it

Resolved, That in the death of these members the Association has sustained a great loss, that we deeply deplore their death and extend to their families the heartfelt sympathy of this convention, and that the secretary be instructed to forward to their respective families a copy of these resolutions.

Marion W. Blair, Pennsylvania,
W. L. Vermilya, Texas,
Parley M. Davis, Utah,
C. C. Dyer, Massachusetts,
B. H. Richards, Jr., Illinois,
Frank Woods, Indiana,
W. P. Alsip, Canada,
Cyrus Borgner, Pennsylvania,
Charles Frank, Michigan.

MARION W. BLAIR: That, gentlemen, is the resolution; and in spite of the Secretary's comments on the Bureau of Standards being interested in the work and no spe-

cial message being necessary, the Committee on Resolutions recommend that this resolution be sent direct to the director, Dr. Stanton, director of the Bureau of Standards, and for this reason. In the first place, we owe it to Major Howard and his work in the clay field to support his work, and we owe him the courtesy, and in the second place, we owe it to Dr. Stanton, he is coming into a new administration and appropriations for his department will need to be made, and he needs the upholding of his hands in the work that he is undertaking for this industry.

Therefore, gentlemen, we move you the adoption of this resolution with the direction to the Secretary that he communicate the resolution to Dr. Stanton, the director of the Bureau of Standards, by wire.

(Said motion was duly seconded and unanimously carried.)

MARION W. BLAIR: Mr. Chairman, the written resolutions to be brought before this body by the Committee on Resolutions we have here, and we wish to report as follows:

Resolved, That the National Brick Manufacturers' Association commend the work which has been done by the Bureau of Standards in testing the strength of brick structures and their behavior under stresses and strains, and that they strongly urge that such work be further enlarged to furnish accurate data upon such structures when built of various qualities of brick and similar clay construction materials, with mortars of the various commercial obtainable kinds and grades, and when constructed with varied qualities of workmanship carefully and severally described.

Resolved, That the Committee on Technical Investigation of this Association be requested to immediately take up with the Director of Bureau of Standards the possibility of co-operative investigations of this sort, and if such are found possible to use their best efforts and the means at their disposal to further this work.

Resolved, That it is the sense of the Association that this work is of the utmost importance, not only to the members of the Association, but to the country at large.

J. H. MEAD: I move the adoption of those resolutions as read.

(The said motion was duly seconded and unanimously carried.)

SECRETARY RANDALL: This, Mr. President, brings us to the miscellaneous business, and in the miscellaneous business we have some letters from absent members which, if we had the time, no doubt you would be glad to hear, especially from Mr. Purington, and Mr. William H. Hunt, who is making the trip around the world, and our Vice-President of St. Louis, who has been detained unavoidably.

Now the invitations from the various cities to hold our convention there include the following: Pittsburgh, San Francisco, New Orleans, Richmond, Virginia, St. Louis, Milwaukee, Nashville, and Niagara Falls.

PRESIDENT ROGERS: I presume that the Secretary might be instructed to thank the parties who have tendered us these invitations and assure them that the same will be considered carefully by our Executive Committee when the matter of time and place of our next meeting is taken up for final action. If there is no objection that will be carried.

JOHN W. SIBLEY: I understand, and was under the impression that you had received an invitation from Birmingham.

SECRETARY RANDALL: That was acted upon at the time, but I beg your pardon for omitting it from the list.

JOHN W. SIBLEY: I had the letter there.

SECRETARY RANDALL: Do you want me to read it now?

JOHN W. SIBLEY: No, I read it at the time.

PRESIDENT ROGERS: The Secretary will notify

these different cities that we have received their invitations with thanks, of course, and that the matter will be taken up by the Executive Committee at the proper time. If there are no objections, it is so ordered.

Pleads for Exhibit at Panama Exhibition.

R. C. PENFIELD: Gentlemen, I regret to have to speak to you at such a late hour on what I think is a very important question, and I am also very sorry a larger membership is not present for its consideration.

We have an exposition in San Francisco in 1915. If we are to do anything as an organization, or as an industry we must begin to make our plans at once; and this is the last opportunity to speak to this convention.

I believe that the greatest good to the industry in the way of an exhibit of clay products could be made at the Panama exposition by the erection of an edifice, a building of some kind in its construction, in its equipment, and in its furnishings, practically taking in the whole range of clay products.

It is possible, I believe, to arrange that the building to be erected shall be a permanent exhibit, and it is possible also to erect it upon government ground, so that whatever is expended in the way of an exhibit would be something of a lasting nature.

There are a large number of clay workers in the United States, and if the matter were properly put before them, I believe they could be induced to assist in this undertaking in a way that the burden would not fall heavily upon anyone, and that a very credible exhibit could be made.

I expect to make a trip to the coast within the next two weeks and to see the President of the Exposition Company and if a site could be obtained upon which an exhibit of this kind could be erected and a plan worked out for its consummation, I believe that the exhibit would be very valuable to the industry and would be a Mecca towards which the clayworkers and the country in 1915 could go, and possibly it may develop that a convention could be held in San Francisco then. It would be a very desirable time to hold one; as a matter of fact the exposition comes in February, the natural time for holding our convention is in February or March. This is simply a possibility which, of course, I understand you cannot consider now, but if this exhibit was perfected it would make a good excuse for our convention there.

Seeks to Interest Architects Through Prizes.

The plan that I had in mind would be to offer the architects of the United States a prize for designing this building after we have determined who will take part in its construction,—I have already heard from some of the terra cotta people. They say they would like to work in connection with that, and the face brick people would, and the tiling people, and the people that make fire-proofing in construction, and a beautiful building could be designed.

ANTHONY ITTNER: Would it be a dwelling house?

R. C. PENFIELD: No, a shelter house or edifice of some kind, it might be in the form of a library; it will depend upon the location.

PROF. ORTON: It might be an art museum.

R. C. PENFIELD: Yes, an art museum; a permanent exhibit for clay products, for instance, something of that kind; it is just an idea that I have, it is very vague and hazy, but it is something we can work out if we start at it.

Mr. Brown, one of the directors of the Panama Ex-

position, said he believed a location could be obtained which would practically be one of the main entrances to the grounds, a beautiful brick paved roadway leading in from immense brick gateposts, and a portal leading in the exposition grounds could be worked out, something which would be highly creditable.

An architectural competition for this would be a fine ad for the industry. And it is possible a plan could be worked out whereby the architects of the country could have a room provided for them in this building where they could meet. It could be made the rendezvous for all of the architects, or builders and clayworkers of this country and other countries.

What can be accomplished by a little help from seven thousand, or eight or ten thousand people in this country is immense, if you can only get them to give it; and I claim that you can get it from every clayworker in the United States. You can get him to come through on any proposition in which there is anything for him. The trouble is that we do not drive our arguments home—we do not drive our plans home to the clayworker so that he knows that he is going to get something out of it; but if we do this we will receive his support in this undertaking, and we can do something that will be a great credit to the industry; something that won't cost a whole lot from any one source, or any one individual.

The people on the Coast are royal fellows. Mr. Frost, of the Los Angeles Pressed Brick Company, came clear out here from California to put up an exhibit at the clay show just to show that he believed that the brick manufacturers of the country ought to work together, and ought to co-operate. If we could send back word to the coast that the manufacturers of the United States will chip in, if only so little, you understand, to work out this problem, I believe that we will do something to help the industry to get together; to find a common interest; and I believe that if this can be done we are going to accomplish greater good for the industry than in any other way.

Another thing. There is no reason why we should not impress upon this country the necessity of fire prevention, and suggest a way to stop fire losses, by substituting brick buildings for frame. All that can be worked out; it simply needs a certain amount of attention on the part of the clayworkers.

Invites Union Official to Talk.

I see today with us Mr. Preece, who is the Vice-President of the International Bricklayers' Union. This is rather a dangerous place for him to be here, among all these brick manufacturers, because there have been times when we did not feel as friendly towards the bricklayers as I think we have occasion to at this particular time.

We went to the Bricklayers' Union and told them that in putting up our exhibit at the clay show, we were meeting with difficulties in not getting the proper co-operation from their members. They said: "That ought not to be, we will go over there in person and we will assist in the work; we will see that the best possible work is done, and the most work is done; we will help you; not only will we do that, but we will make an exhibit there; and not only will we do that, but we will contribute for the success of this undertaking; we believe that the bricklayers ought to unite with the brick manufacturers in every way they can to induce the use of brick, and to assist the brick manufacturers in disposing of their product and in increasing their business." Mr. Preece went further than that by saying, that at the next annual meeting of their association, he would advocate—and as

he is a member of the Executive Committee, he believes that he will be successful in doing so—that he will advocate the setting aside the sum of \$5,000 or \$10,000 with which to construct a building such as we have been talking about at San Francisco, or to help put up the exhibits in the clay show; the whole object and purpose of which is to increase the sale of brick.

I think it is a very happy situation that officers of an institution like that realize that there is some way in which they can work with the members of this association, and that they have shown a disposition to go down into their pockets and hand out some money to help the work along.

If we could start in carrying forward this 1915 exhibit, for instance, with the assurance that we had back of us the members of this organization, without it contributing a large sum of money, probably sufficient to carry out the work on such a building, it would be a great help and a great encouragement, it seems to me, to the members of this industry, and to those that are interested in this undertaking. I wish, before we pass along, I would like to have Mr. Preece say a word, because I have been saying what he said to me, and I want him to say to you what he has said to me.

I would like in the first place before reading a resolution which I have here and which I wish to offer, I would like to know if anyone here would be willing to speak on this subject, or if they have any remarks to make before the proposition of an offer being made to bring about such an exhibit for the clay industries.

Orton Indorses Exposition Plans.

PROFESSOR ORTON: Mr. President, it is a late hour and I don't believe that the members want to delay long here, but I may say that the idea of a satisfactory exhibit of the clay industries in San Francisco appeals to me rather strongly. I think, however, that any such exhibit as might be designed should not try to include the pottery industries as a part of the proposed exhibit.

It seems to me it should be a construction material in clayware. I have had experiences in several of these international expositions, and was in charge of the clay exhibits in St. Louis and I found there the greatest difficulty in getting harmonious action, or a harmonious spirit between these two classes of clay products.

It seems to me, therefore, that a construction material exhibit might be possible.

For Mr. Penfield's suggested plan of making the building a permanent memorial, I would say that in spirit it appeals to me greatly, but in possible execution I see great difficulties. For instance, a building to be designed to be a beautiful and permanent thing must be designed without a desire to show or exploit a great variety of materials. You could not build a building of panels, illustrating the products of all parts of the country; you could put such materials into it temporarily, perhaps, but the building as an entirety would necessarily be designed according to the principles of architectural harmony, and that would mean a large use of some few materials, relatively.

Now, I see where there might be difficulty in getting such a thing as that put up by the contributions of a large number of separate interests.

On the other hand if such a building is built and can be made a beautiful, palacelike structure like the marble building which is the sole survivor of the group of buildings at the Centennial at Philadelphia, it would, of course, be a wonderful thing for the clay exhibitors to be able

to point to it as theirs. I see the advantage of it; but I see the difficulty of it also.

On the question of being able to assemble a great exhibit of the different kinds of clay products artistically displayed, in some permanent or temporary exposition building designed for our use, I cannot see why that should be either difficult or impossible, and I hope it will go through. I want, however, to say just at this point I think that an exhibit of products alone will not fully cover the ground.

I think such an exhibit to have it of most value should not only exhibit materials, but processes, raw materials; in short, the educational side of it. We should endeavor to make it a clay exposition in itself, and not an exhibit of clay products only.

Offers Resolution Voicing Sentiments.

R. C. PENFIELD: I understand all that, Mr. Orton. I see the difficulties in the way; but the only thing I could do was to get our views of it, what we want to accomplish and see if we cannot work it out. I know it is hard, but we can try, at least. I offer a resolution to that effect. We will have something to start with:

Resolved, That it is the sense of this Association that the clay industry of the United States should be represented at the Panama-Pacific Exposition by a general exhibit of such magnitude and diversity as to properly portray the beauty and variety and utility of clay products.

Be it further resolved, That it is the sense of this Association that the membership of this Association join and aid in such an undertaking, and that other lines of the clay industry, such as terra cotta, encaustic tiling paving brick, etc., be invited to join in this general exhibit, and

Be it further resolved, That the thanks of this Association be extended to the Panama Exposition Company for its invitation to make such an exhibit.

Now, they sent their representative here, and if the plan we have is carried out and a piece of ground can be obtained upon which an exhibit can be permanently erected, it would give us something that would be lasting in its character. The resolution is now before you. Take such action as you wish.

WILL P. BLAIR: I second the adoption of the resolution.

R. C. PENFIELD: Mr. Preece is here, and he came here at my request.

PRESIDENT ROGERS: I was going to say that I do not know that our organization is absolutely opposed to trade unions. I think it is possible we have reason sometimes to question the methods which they adopt to accomplish their end. We should like to hear from Mr. Preece, but we will have to ask him to be rather brief because the hour is pretty late.

IVERSON C. WELLS: Just before Mr. Preece talks, I want to give a little more credit to the part his organization took in the clay show. Mr. Penfield is just a little stingy.

As a matter of fact, the officials of the bricklayers' union made the first approach. They wrote to the Clay Show management and said they would like to have a space or two there to make exhibits of their own, and incidentally in the letter Mr. Dobson, the secretary of the union, said: "We would like to know if there is anything additional that we can do to help along the exhibition and the work." In reply to that the Exhibition management thanked them for the offer to put in the exhibit and then went ahead and covered the grounds that Mr. Penfield suggested, calling attention to the fact that last year there were certain arrangements in the way of constructing the exhibits that caused considerable dissension among the exhibitors.

A letter then was written by Mr. Dobson, the secretary, expressing surprise that such a condition and state of affairs existed last year, and said that on receipt of that letter the Executive Committee of the union instantly went into session and discussed it in all its phases, and that they wanted to assure the exhibition management and clayworkers in general that they were in hearty sympathy with the clay manufacturers of the country, and believed that their interests were mutual, and that they wanted to be put right; and that following this session they had decided to make an offer to contribute the labor necessary to construct the various exhibits at the Clay Show. Other assurances were given for their desire to co-operate.

The union officials were then answered, and the reply was to the effect the offer was accepted and arrangements were to be made. Mr. Bowen, the president of the union, came to Chicago, and after he arrived here he ascertained that the exhibition was a much larger proposition than he thought it was—he was not here last year, and he saw that to fulfill his offer probably would bankrupt his union; for he figured we had a small exposition here. Finally, a compromise was made, and the union took upon their shoulders the burden of 20 per cent of the actual construction of the exhibits, and there has been a very close feeling which has grown up between the bricklayer and the brick manufacturer in the last two or three weeks, and this should be encouraged.

I am awfully glad, for one, that we have invited Mr. Preece here to talk before us, because I think he is going to open your eyes as to what the union really stands for, and its position towards the brick manufacturers. I thank you.

Union Chief Addresses Convention.

MR. PREECE: Mr. Chairman, and Gentlemen of this Convention: I want to say that it is quite a pleasure to be invited to say just a few words to the manufacturers of brick, and terra cotta and so forth, manufacturers of machinery for brick manufacturing and the rest of it, for the reason that I understand from some of the representatives since we have been at the product show, that the brick manufacturers themselves have not had a very special liking for the bricklayer.

Of course, we can all understand that employers and employees do not agree at all times over the conditions under which they work and the price that is paid for work.

I understand that the brick manufacturers employing bricklayers to build kilns and so forth, sometimes feel that the bricklayer is not doing his duty and they disagree with him, and fire him and hire another man. But how it is that they get a general feeling against the bricklayers I do not understand. I want to say that I have had a great deal of dealings in the past ten years, that I have been in conference with the manufacturers of brick throughout the country, settling a great many disputes for them between our men and the manufacturers; but I never found any great feeling between them. It was only a matter of business, employer and employee, one thinking that he did not get sufficient for what he was doing, and the other thinking that he was not getting sufficient for what he paid; but outside of that, when it was settled, there was no feeling that I know of.

I do find that there has been a feeling against the bricklayer for the reason that the manufacturer thought that the bricklayer did not care anything about him or his industry, and that he would just as lief work for a man putting up concrete as he would a man putting up a



At the recent Corn Growers' Show, held in Windsor, Ontario, the Western Ontario Clay Workers' Association put on an exhibit of burned clay products, which drew considerable attention.

Of especial interest were two walls, one of red brick in red mortar with beaded joint, the other of fire flash brick in black mortar with raked joint, showing a new combination of brick and building tile, in wall construc-

tion, which insures perfect ventilation at all times, is frost-proof in winter and cool in the summer.

To erect an ordinary eight-room dwelling in this way, requires 13,000 veneer brick and 2,000 building tile, which brings the cost, under the Windsor conditions, to about the same as when building of other material, but gives a more substantial dwelling. The plaster is put directly upon the building tile, eliminating the use of lath.

brick wall. I want to say to you, gentlemen, that the bricklayers, as an organizations, and as individuals, are here to take any position that the manufacturers of brick and terra cotta take, even though that position may be a little unfair to some people, we are willing to go all the way to promote the clay industry as against any other industry, concrete or anything else. (Applause.)

Says Manufacturer Has Been Asleep.

The great trouble has been that we have been asleep. The manufacturer of cement in the past fifteen years has been alive to his own industry. He has agents paid enormous salaries and expense accounts going around the country and visiting every architect in our city, or any other city, where concrete may be used; visiting every engineer, and having engineers trained to the concrete systems, to go before engineers' conventions, talking to engineers, and advocating the use of concrete as against any other material for construction purposes.

Why, it is only about three years ago I was at a meeting of architects, being invited there one afternoon, when a gentleman got up and read a paper on concrete; and believe me, when that man go through reading his paper the architects gave him a great ovation; they pulled the ceiling off of the building nearly. He went on to show what could be done with concrete all through his paper. He was representing a large cement industry, and that was what he was paid for. They have been boosting their industry thoroughly; they have paid millions of dollars to do it. They will pay any man where he has got from one thousand to two thousand yards of wall, to put concrete in. The representative of certain cement manufacturers, or agents will come to him and offer him a bonus to put

in concrete as against rubble stone, or clay tile, or brick, and will hand him money right in his pocket. I know a number of contractors and foremen for contractors, who have offered money and took it. We have tried them and fined them for it, whether it has been optional with them, whether they put in concrete, or brick, or stone walls at the option of the contractors, and the superintendents have been seen and bribed to put in concrete as against the other materials.

Now, I want to say to you that since we have awakened, and I presume last year was your first waking up from the dream, I came to the Clay Products Show last year, and saw it and admired it very much, and I told my friends that it was the beginning of the industry of clay; and that that show brought it before the general public more than it had ever been before. This year, of course, you have done well again. By some means or other, you have not as many exhibitors this year as last year, and I don't know the reason for that, of course, but I presume like all other industries you have jealous factions among yourselves and different associations.

Sees Handicap in Divided House.

The one great drawback that you will find in the boosting of this industry is the many associations. You will find that it will come to a time that you will have to consolidate all of these associations in one; you will have to have a central body where delegates of the various associations will be represented, so that when an action is taken on the part of some of them it will be the rule and regulation of all of them. You have the common brick organization, and the front brick organization, and the tile organization, and the terra cotta organization.

One organization meets and takes action on one thing, and the other organization meets and takes action just the opposite to what has been taken by the first; or the two meet and take action on one proposition and another one meets and takes a different action; so that consequently you have a conflict all of the time.

When one organization starts something on a proposition something such as Mr. Penfield has just proposed, that is a memorial at San Francisco, invitations are sent to the others and some vote it up, and some vote it down, the result is that you have no united action; you have one pushing one way, and the other pulling the other way.

I want to say to you that if the clay product proposition will take hold of this thing and keep it going, no matter where the exhibition is to be held, either in Portland, Me., or San Francisco, or Tampa, Fla., or in the northern end of Alberta, you will find the bricklayers' union with you and on the job. (Applause.)

It would be a very unfair and a very unwise thing if we were not, because the very fact of the manufacture of brick, or of tile, or of terra cotta, or any other product that the bricklayers use, if he is promoting it, and spending his money and trying to bring it on the market, to bring it before the public and convince it that that is the proper material to use for the erection of their dwelling houses, offices, stores, and so forth, or of anything else, it certainly must be of benefit to us. The building cannot go up without us, we are the people who construct; and the building cannot go up without you, because you are the people who manufacture the material we use in the construction. If we do not take hold, and are not as enthusiastic as you are, it would be unfair to ourselves.

Denies Bricklayer Restricts Day's Work.

Now, I want to say to you that I understand there has been a feeling among some manufacturers, and I want you to tell your friends who are manufacturers what I say to you this afternoon.

It is understood by some manufacturers, and not only by them, but by others, the general public in fact, that we have an organization that is absolutely secret, and that we restrict our men in the amount of work per day they shall perform. I want to say that that is untrue. I want to say that in the last twenty-four or twenty-five years that I have attended our annual conventions, but which now have been for the last six years bi-annual, there has never been a resolution introduced in any of those conventions or any amendment suggested to the constitution or by-laws limiting the amount of work, or the amount of brick that a man shall lay in a certain day's work of eight or nine hours. It has never been suggested on the floor of the convention, or on the floor of any of our local unions within the jurisdiction of the United States and Canada. No action has ever been taken looking to restrict the number of brick that a man shall lay in a day's work. There is no restriction whatever.

Another thing I want to get clear in your minds, that when you employ a bricklayer, one, two or three, or fifty, and if there is one of them that does not do his duty, or if ten or fifteen do not do their duty, you have the privilege of discharging them immediately; you can send them about their business and hire ten more; you can hire and fire as far as you please until you do find men that will do their duty to you. If your foreman is not satisfactory you can fire him and the union will not ask you to put him back. I am not going to try to tell you that that is true of all organizations of labor, but it is true with us.

I want to tell you that the bricklayers' international organization is not going to do that, neither are any of its local organizations going to do it.

Another thing we are accused of is the limitations of apprentices. I want to assure you that there is no man deprived of apprentices in this country if he is a contractor and is capable of teaching a boy the trade of bricklaying. We have a special pride in teaching apprentices. We do not only teach our apprentices to be bricklayers, but we teach them to be theoretical men; we teach them the architectural end of it, to draw plans and to figure out details, and to fit them for foremen and superintendents, and eventually we hope that they shall become the contractors and that we shall work for them.

Every brick contractor in the city of Chicago, and there are nine thousand of them, is entitled to three apprentices each year, to take one in when one goes out; and if that is not a liberal allowance, I do not know what is. The great trouble is that we look at things as they are today, we do not look at things as they were a year ago.

Lays Trouble to Abnormal Conditions.

No industry, even the bricklaying or the brick manufacturing industry, can provide for abnormal conditions. If I was to tell you that one manufacturer of brick when he closed up last fall was over 25 cars of brick behind his contracts, you will wonder why he does not manufacture them and sell them. Abnormal conditions existed, and they could not supply the brick.

I could have used and put to work over two thousand more bricklayers in two provinces of Canada last summer and kept them at work the whole season up till Christmas if I had them, but I could not get them. Every other city in Canada was the same; every other city of the United States was the same. There was only one city in the whole Union, I believe, last summer that was not busy in the building industry.

When it comes that every little village of five hundred people and more ask for bricklayers that never before could maintain one bricklayer steadily, and then comes a season when all of those towns will ask for eight and ten, how are you going to supply them? You cannot have them standing on the sidewalk five or six years waiting for a condition of that kind to come. Ordinarily, and under normal conditions we have all the bricklayers to supply all of the wants of all the contractors in the country.

I want to assure you that we shall maintain our position in teaching as many boys as we can; but we do find a great difficulty in getting contractors to teach boys the trade. There are some of the largest construction companies of the United States here who refuse even to take one boy; they don't want to be bothered with him; so, you see the fault is not ours in a great many instances. You can go to the George A. Fuller Company right here in the City of Chicago, go to see Mr. Weather-spoon, who is their general western manager, and ask him if you can have a boy apprenticed through that firm and he will tell you "no." That is a corporation, I presume, incorporated for over sixty millions of dollars; one of the largest on the continent. Yet they will take no apprentices; don't want them; don't want to be bothered with them. Now, that is not our fault if they will not take them, we cannot make them. We do, however, look to the small contractors to teach our boys the trade of bricklaying. They are the people who take our boys and teach them the business.

I want to conclude, gentlemen, by saying that the resolution just adopted relative to your memorial for San Francisco certainly meets my approval. I had in mind, when the gentleman who introduced the resolution, spoke of a shelter house on a piece of public ground in the Presidio of San Francisco, which is a very beautiful spot facing the water there. There is plenty of room on the Presidio, which runs about two miles on the water front. They are putting up a civic group there, or are trying to, some two or three buildings there and there is no reason why this plan could not be a part of that civic group, your shelter house built of clay products. I understand from the gentleman here how hard it would be for all the associations of brick manufacturers, and terra cotta manufacturers and tile manufacturers, and so forth, to have a part of their particular industry represented in that building.

Declares Project Should Eliminate Selfishness.

You will have to get away from the selfish idea. The members of the associations, who have their product in that building ought not to even know where it is. No part of the clay products, no matter where manufactured, nor by whom, should have displayed upon it the name of the maker nor where it was manufactured. It should be merely a clay product memorial, known as being manufactured in the United States of America to the credit of the manufacturers of clay products.

As far as we are concerned, if we can help, we will volunteer to supply a reasonable sum of money towards the erection of the same. It is possible it could be planned like some of the Santa Fe restaurants and hotels along its line between here and San Francisco, by having a large open space for shelter, where people could sit and look at the vessels coming into the harbor of San Francisco. That would be a beautiful thing, and there can be many designs in its various points brought out with beautiful pieces of terra cotta, and beautiful pieces of brick work, and the floor could be laid with fireproof tile and then encaustic tile walks and everything of that kind around it; the road leading to it could be paved with vitrified paving brick, so that all the industries could be represented in it.

If you do desire to put up such a building, I assure you you will have our co-operation as far as possible for us to give it. I thank you. (Applause.)

PRESIDENT ROGERS: Have any of the gentlemen anything else to bring before us at this time?

C. P. MAYER: The discussion, and what those gentlemen have said, has had an awakening effect on me, and I have thought while they were speaking when the brick industry undertook to erect a memorial that is to be there permanently, it should not be of a mean order.

When the matter was mentioned of rivalry of material in the structure, the first thought that struck me was that it would be difficult because every manufacturer would want his material displayed therein; but what the last speaker has just said has given me another thought. If the brick and clay manufacturers are not big enough, and great enough to say here is where we will lay aside all of our selfishness in order to support a general movement of that kind, then they are not as big as I think they are. I want to say for my company and for myself that we will contribute when the time comes to a structure of that kind whether there is any Mayer brick in it or not. (Applause.)

I only want to say after the structure has been erected, and when I visit it: "Well, there is one brick that we sent there by parcel post that is put into this building; I don't know where it is, but we have a brick in it

somewhere." That is all I want for a reward. I thank you. (Applause.)

SECRETARY RANDALL: I would like to say just one word to Mr. Preece in this connection. There is no quarrel between the manufacturer or brickmaker, and the bricklayer. Our trouble is that there are not brick masons enough; we want more, that is our cry. We want more brick masons; we are not quarreling with the brick masons we have.

MR. PREECE: I want to assure you that if we can aid you we will do so. And I want to say that if we can promote the increase of the clay products we will do so.

SECRETARY RANDALL: There is this about the concrete business: if the concrete comes into general use, the bricklayer is going to lose his job, there is no question about that; so it is as well that we should get together on a common ground in this connection.

MR. PREECE: We can.

Wants Bricklayers to Join N. M. B. A.

C. P. MAYER: Another thought struck me, would it not be advisable, since the bricklayers' union has come to the point of a little different idea than they had a few years ago—I could tell you, gentlemen, some things that the bricklayers' union did to me that would not sound very well, but I am not here to thresh out personal differences between the union and the brickmakers,—

MR. PREECE: That is good.

C. P. MAYER: But I was going to suggest, would it not be a wise thing if the National Brick Manufacturers' Association, which stands as a mother to so many other associations which were mentioned, if the bricklayers' union could not come in with us in convention and be a child of the mother association? Would it not be nice if you will meet with us in convention, extend a hand and we will receive it?

MR. PREECE: That is right, sir.

ANTHONY ITTNER: Mr. President, it has come my turn now to say a word. I want to say this, that if there is to be a combination between the Brick Manufacturers' Association of the United States and the Bricklayers' Unions of the United States and Canada, you can have my resignation. That is all I care to say.

R. C. PENFIELD: The suggestion of Mr. Mayer was simply to show the good feeling that existed. We understand that you cannot amalgamate these two associations; we know that part is impossible, but there is one thing that is true and that is that it is certainly far better to have the bricklayers feeling in a friendly spirit and in a spirit of co-operation with us than otherwise.

I think that the great rank and file of the association would appreciate it, and I hope that the minutes that have been taken here will be sent to them. Now, we all have our faults, we all have our shortcomings, we are not perfect and there is a chance of improvement in all of us, and all that sort of thing; but I believe that the beginning of a better feeling between the bricklayers and the manufacturers is now started, and I hope to see it go on.

I do not want anything to occur that will either offend any of our old members, who have reasons and good ones to feel as they do, or, on the other hand, to have the voluntary assistance that has been offered us in any way discredited; and I do not think it is. (Applause.)

Urges Decisive Action.

IVERSON C. WELLS: One word or two there. I do not believe that your honorable body has fully understood and appreciated the significance of Mr. Preece's

offer to you. Why, the International Bricklayers' Union has come to you and offered to co-operate in any way to boost clay products. It is willing to work shoulder to shoulder with you. I have talked to Mr. Preece and other members of his organization, and I know they are heartily in sympathy with anything that will boost clay products.

I would suggest, although I am rather a baby here in your organization, and I would really like some one else to talk upon that subject, but I would suggest, if you will pardon me, that inasmuch as Mr. Preece here has tendered the co-operation of his organization, that this body would accept his kind offer and even go so far as to appoint a committee, or some one to confer with his people and see what can be done and take some action. Not just say, "Well, we are glad of it," and let it go at that; but we should say, "We are going to do so and so." We ought to work together with them, and if we have certain demands which would tend to help the situation along, to make them before their organization and see if we cannot effect some sort of a compromise, or understanding of some kind. I know they are offering to co-operate with their whole heart and soul. We must do more than say, "We are glad to have you here;" we must meet them half way and say, "We are with you," and see if we cannot get together, and if these two big organizations in the clay industry do not get together we will have a hard row to hoe; because, if we don't have the bricklayers with us, there is going to be a drawback.

Of course, we can go out single handed and fight the battles, and we may get strong enough to put it over, but we want the bricklayer along with us; we want him to feel that he is helping us along.

I understand that the Bricklayers' Union is willing, not only to contribute its time but its money,—and they have a great, big, fat treasury, much bigger than we have—and they are willing to dig down and put up their hard earned dollars not only for the next Clay Show, but for any movement you may want to take up in boosting clay products.

PRESIDENT ROGERS: I don't understand that there is any great trouble between the Masons' Union and the brick manufacturers.

IVERSON C. WELLS: I have been talking with quite a number of the members in the last six months and they seem to think that the bricklayer has not been treating the brickmaker fairly as to apprentices. There seems to be a misunderstanding there. Let us get together on that.

Wants to Thank Preece for His Address.

R. C. PENFIELD: I want to make one resolution—the remarks that Mr. Preece has made, he made at my suggestion. He came down here at my suggestion because he had rendered valuable service to the exposition. Now, as an organization, the National Brick Manufacturers' Association as such has nothing to ask any other organization in the way of assistance in making the exhibits. You understand that will be made by the organization which constructed the exhibit, and the statement that Mr. Preece has made here was for the purpose of showing the brick manufacturers that they, the bricklayers, believed in co-operating with us and are willing to go down into their pockets and spend their money to help us.

Now, there cannot be any question about that situation, and I move that a vote of thanks of this organization be extended to the International Bricklayers' Association for

the co-operation which they have extended to some of our members in connection with exhibits, and for the offer of assistance which they have made to the brick manufacturers of the country in caring for any further exhibits, the object of which is to increase the sale of clay products.

WILL P. BLAIR: Mr. President, I do not think there is anything before the meeting requiring any particular action. We all are very much pleased at Mr. Preece's appearing before us and what he has said showing the disposition towards co-operation on their part, and that is one thing. But there is no suggestion in a formal way coming up for anything to be done, but I think it would be entirely proper to recognize the coming of Mr. Preece here, and extend a vote of thanks for his presence and attitude towards this convention.

PRESIDENT ROGERS: Do you second the motion, Mr. Blair?

WILL P. BLAIR: Yes, sir.

(Said motion was carried unanimously.)

SECRETARY RANDALL: There is one announcement I wish to make to you again. I will first say that I have got some banquet tickets for sale very cheap, at a great reduction in price. I wish to announce that the entertainment committee is going to give an informal reception tonight, in the same room in which we were so well, entertained last night, and I think it is understood to be for eight o'clock, and, as I so understand, there is a great number of very pleasant surprises for those of you who are present.

This afternoon at 4 o'clock we are to go out to the Coliseum "en masse," whatever that it, and celebrate; and it is hoped that everybody, that all of the delegates and members, and their friends will try to arrange to go in a body at that time to the Coliseum.

Calls Convention Best in History.

I believe with that word, Mr. President, I have said everything except just to say to you all that we can say that this is, in many respects, the most gratifying convention we have ever held, in the quality of papers, in the character and spirit of our discussions, and in every other feature of the convention. I think it will pass down in the records as one of the best, most gratifying meetings we have ever held. Many of us thought that the National Brick Manufacturers' Association made a mistake in coming back here, but we may well congratulate ourselves that we did.

WILL C. BLAIR: I want to add just one word. I know there are many manufacturers, and many members of this association who have not been down, perhaps, to the Clay Show. And I have been surprised myself. I tried to run down there between meetings and to be there as often and frequently as I could. I heard complaints last night from others that there were no manufacturers there to talk to them, so they came to see the show and went away without information. There was a mob of people there last night. I went down there this morning and I was utterly astonished to find so many interested people on the floor. I hope every man will go there this afternoon.

SECRETARY RANDALL: I forgot to say that the ladies will be entertained in this room this evening.

PRESIDENT ROGERS: I will say, ladies and gentlemen, that this brings to a close our twenty-seventh annual meeting. It has, in every way, been a very successful and satisfactory meeting. I believe that every gentleman,

and lady as well, who has attended this convention will return to their homes feeling their time has been well spent. That they have enjoyed their visit here.

I think, too, that the members of the association must have received great benefit from the papers that have been read, and the discussion of them during our meetings.

I want personally to thank the gentlemen and ladies for their courtesy to me. This will close our meeting.

(Whereupon the convention adjourned.)

LOVEJOY HEADS CERAMIC SOCIETY.

Technical Body Selects Columbus Engineer as President and Re-Elects Orton as Secretary.

(Special Correspondence)

Washington, D. C., April 5.—The fifteenth annual meeting of the American Ceramic Society was brought to a close Feb. 27 with a banquet at the University Club, attended by the sixty delegates and a number of prominent Government officials and scientists.

Not only were the meetings largely attended this year, but the character of the papers was exceptionally high, and the members asserted that the convention was the most successful in the history of the organization. The program was carried out in detail as published in the "Brick and Clay Record" for Feb. 15. The final business session was brought to a close with the election of the following officers for the ensuing year:

Ellis Lovejoy, president; Adolph F. Hottinger, vice-president; Edward Orton, Jr., re-elected secretary; Herford Hope, treasurer, and Francis W. Walker, member of the board of trustees.

Following a meeting of the board of trustees on the night of Feb. 24, the first session of the convention opened Tuesday morning at 10 o'clock at the Raleigh Hotel. Routine business was transacted, after which the literary program opened with the presidential address by Arthur S. Watts, of Columbus. Dr. Joseph A. Holmes, director of the Bureau of Mines, delivered an informal address on the work of his bureau, describing many of the interesting details of the work of which he is in charge.

The afternoon session was opened with an address by Dr. F. W. Clarke, chief chemist of the United States Geological Survey, who told of the needs of pure research in explaining the processes by which rocks break down into clays. The brick industries of Europe were described by G. W'son Cronquist, of Sweden, who is in this country studying the American clay industries as the representative of the Swedish government.

Unusually interesting was the address of Dr. S. W. Stratton, director of the Bureau of Standards, which, under Dr. Stratton's direction during the past few years, has assumed one of the most important positions in the various government departments. Dr. Stratton told of the work that is being done, the tests that are being made, and discussed other phases of the bureau's work.

All of the foregoing were invited speakers, and at the conclusion of their addresses the society took up the regular papers in the order listed on the program printed last month in the "Brick and Clay Record."

The sessions were held in one section only; that is, there was no fixed point in the program for recess or adjournment, the speakers responding when their papers were reached. The program was classified into groups of more or less related topics under the following heads: "Occurrence, Winning, Preparation and Testing of Raw Materials," "Manufacturing Processes," "Bodies, Glazes and Colors," "Burning, Heat-Reactions, Fuels, Kilns, etc.,"



The wagon shown above is one of several in use by the Johnson & Johnson Co., of Raleigh, N. C., and shows with what facility a load of brick can be delivered "on the job." The photograph was taken recently at the site of the addition to the new Federal Court and Postoffice building, the load being dumped directly into the basement for foundation work. As may be seen from the picture, the driver can drive close to the edge of the excavation and, without backing, place the rear end of the wagon in such a position that the brick may be slid gently down the chute into the fifteen-foot excavation, thus saving time and handling for both the brickmaker and the contractor. In sending the above statements, Johnson & Johnson write: "We find that with two wagons of this type we are able to deliver from cars to jobs which are not over a mile haul, as many brick as with three wagons where the driver has to handle the brick in unloading." The wagon used by the Johnson & Johnson Co., is the Auburn, made by the Auburn Wagon Co., of Martinsburgh, W. Va.

"The Testing of Clay Products," "Glass," "Enamels for Metals," "Cements and Hydrosilicates," "Physical Tests of Raw Clays."

On Friday, Feb. 28, the members made an excursion to the Bureau of Standards and the Geophysical Laboratory of the Carnegie Institution. Practically the entire morning was spent at the Bureau of Standards, where the members were shown the work that the bureau is doing, not only as to the maintenance of physical and technical standards of all kinds, but as to the investigation work in various fields of pure and applied science. In the afternoon the geophysical laboratory was visited, and the methods of research by which the classic work of this institution in the field of silicates was fully shown and described by Dr. A. L. Day, the director. The remainder of the afternoon was spent in the ceramic and geological division of the United States National Museum.

Among the special guests and speakers at the banquet on Thursday night were Dr. Day, of the Carnegie laboratory; Dr. David White of the Geological Survey; Dr. Holmes, of the Bureau of Mines; Dr. Clarke, of the Geological Survey, and several other Government scientists.

Many of the members who attended the convention remained over to see the inauguration of President Wilson, and spent the intervening days in visits to the various other Government bureaus and branches in which they were interested. The selection of Washington as the meeting place this year proved a most opportune one, as it is seldom that the National Capital has had more to offer visitors during March, 1913. The arrangements this year proved highly satisfactory to the delegates and much credit was due Prof. Orton, who had full charge of this work.

The purpose of the society is to strengthen the cer-



A. Hottinger, newly elected vice-pres, American Ceramic Society.



Ellis Lovejoy, Newly Elected Pres. American Ceramic Society.



Prof. Chas. F. Binns, Alfred Univ., Alfred, N. Y.

amic industries by the dissemination of knowledge and the stimulation of research. The papers of the members are printed annually in book form and are not made public in any other way.

There are four grades of membership—associate, active, contributing and honorary. The two honorary members are Mrs. Bellamy Storer and John C. Branper.

Except in very exceptional cases, all persons desiring to join the association are expected to apply for associate membership. The honor of active membership is usually conferred upon associate members by the society as a sort of degree in recognition of their services.

TEXANS PLAN PUBLICITY CAMPAIGN.

Bills Before Legislature and Laws Governing Mechanics and Material Liens Discussed at State Convention.

(By Special Correspondence.)

At a meeting of the Texas Brick Manufacturers' Association, held at Austin, March 24, practically every section of the state was represented and a number of subjects of importance were taken up.

The importance of advertising and the best methods of placing advertising to secure the best results was the topic of an extended discussion and the advertising committee was authorized to make advertising contracts of 12 months duration.

The action of the legislature on various bills of interest to the association was discussed and particular attention to the bills relating to mechanic's and material liens was given.

The next meeting place of the association will be Galveston. The meeting will be held early in July. The invitation from the Fort Worth Board of Trade to hold the annual meeting in Fort Worth was accepted.

It was stated during the course of the meeting that more construction work was done in Texas during the past year than in any year since 1907. Predictions were made for an unusually high record in 1913. C. W. Martin, Fort Worth, president, presided. The secretary is Thomas M. Harwood, of Gonzales.

PLANS ADVERTISING CAMPAIGN.

Oklahoma Brickmakers in Monthly Meeting Discuss Publicity Measures.

The fourth monthly meeting of the Brick Manufacturers' Association of Oklahoma was held March 24, in the offices of the Cleveland Vitrified Brick Co., Oklahoma City, Okla., with eleven of the fourteen members present.

The association represents 90 per cent of the brick industry of the state with a capitalization of about \$1,000,000. President W. H. Powell, of the Sapulpa Brick Co., presided over the meeting. E. B. Wentworth, of the Cleveland Vitrified Brick Co., of Oklahoma City, was elected secretary. The chief topic at the session was a campaign of advertising to promote the use of brick as building material for residences.

A noon-day lunch was served at the Lee-Huckins Hotel by the American Brick & Tile Co. and the Cleveland Vitrified Brick Co. Paul B. Smith, secretary of the Oklahoma State Manufacturers' Association, addressed the members at the luncheon. His address was along the lines of organization. He also gave a history of the legislative work done by the association in the last session as well as a full history of the workmen's compensation act. A new bill, introduced in the house as H. B. 17, was examined. All members expressed a desire to support the bill. The next meeting of the association will be held on April 24 at Sapulpa.

Federal Aid Asked for Road Improvement.

A concerted movement has been put on foot to secure an appropriation of \$400,000 from the United States Government, to be utilized in modernizing the historic "Old Wilderness Road," which was blazed through the pioneer country in Kentucky, in 1775 by Daniel Boone and his followers. The Danville Commercial Club, the Middlesboro Commercial Club, and the Mt. Vernon Club will join hands in a united effort to accomplish their commendable purpose. The original Wilderness road extended from the Tennessee border via Cumberland Gap, Middlesboro, Mt. Vernon and Danville to Lexington, to Cincinnati, Frankfort and Louisville.



Lime occurs in clays in several forms, which may be grouped under two heads—the harmful lime compounds, which take the form of stones or coarse grains of considerable hardness, and the useful form, which takes the shape of an extremely fine powder and is most typically represented by washed chalk. The latter form needs no further mention here, but the former may be very troublesome if any of the men engaged are careless in working it, or if they are not encouraged to take the necessary precautions. In the first place, the clay must be dug or won with the greatest care, and any stony strata must not be allowed to mix with the clay. If the removal of the lime compounds by washing or “cleaning” is impracticable on account of the cost, and they occur too closely mixed with the clay to enable them to be picked out by hand, the best that can be done is to allow the clay to weather for a considerable time, and to keep it moist all the time that it is weathering. Where the quantity is not too large it is even better to put it into soaking pits. The exposure of the clay to water and to the air will make it part more readily from the stones, and the latter may then, in some cases, be separated by the use of grooved rollers, which allow the clay to pass, but convey the stones to the end of the rolls, from which they fall into a hopper placed to receive them. Even where the stones are too small to be separated in this manner, they may be crushed far more effectively if the clay is kept wet and well weathered before it is passed to the machines. In such a case, two sets of rollers are desirable, the first are set about $\frac{1}{4}$ inch apart, and the second pair are set as close as possible, so as to crush the stony matter. It is found that, if clay fresh from the face is passed through such rolls, the sticky nature of the material prevents the proper crushing of the harder portion, but if the same clay is weathered in a wet state, the stickiness is replaced and permits the ready powdering of the harder grains. As the great difficulty experienced in dealing with limey clays is the effective crushing of the lime compounds, this soaking and weathering is a valuable wrinkle which is not generally known. A further crushing can be given by driving one of the rolls faster than the other; this is especially effective in crushing thin, flat plates of stone or shale, which might otherwise pass through the rolls uncrushed. A mistake which is sometimes made consists in using fine rolls of too small a diameter. These do not possess sufficient crushing power. The burning of limey

clays has often been described. It is always difficult, because the finishing temperature of the clay portion may be 900-1,000 deg. C., but the temperature at which the lime combines with the clay and becomes harmless may be 1,100 deg. C., or even higher. Yet, unless the fusion of the lime compounds is effected, it will be impossible to avoid trouble with the blowing of the lime. The finishing temperature of the clay may be raised by the addition of sand, siliceous stone, or crushed fire-brick or fire-clay—in fact, any material of a siliceous character, which is more refractory than the clay, of which the brick are chiefly made. In this manner the temperature of the fluxing of the lime and that of the loss of shape of the clay may be brought into closer agreement.—Deutsch Toepf Zeitung.

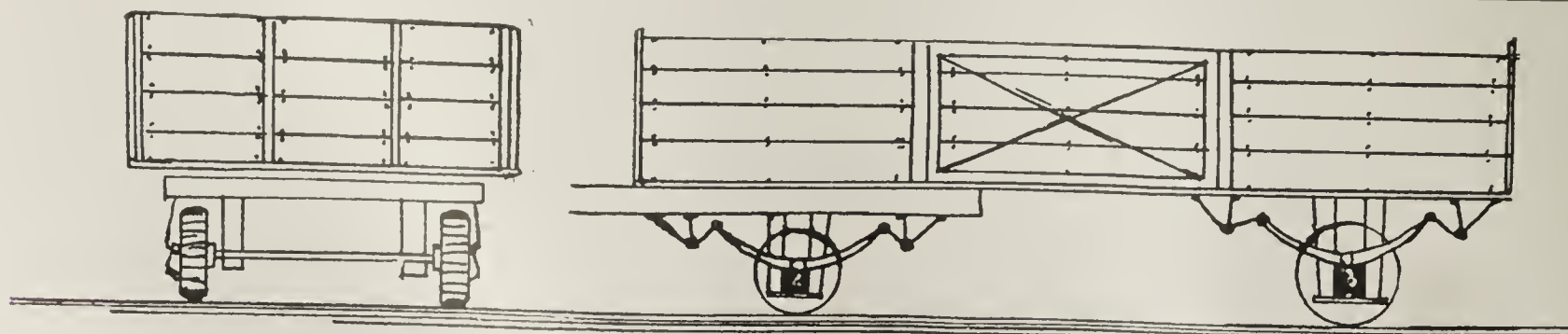
Repairing a Hoisting Chain.

When a hoisting chain breaks during working hours the usual custom is to repair it as well as possible and wait until Sunday or some other time when the shovel is idle to put on a new chain. This is a very heavy job and takes no end of lugging and pulling in order to get it over the sheaves. A very simple method to follow is to stretch the new chain on the ground so as to prevent kinks, etc., disconnect end of old chain from padlock, attach this end to end of new chain by means of an open link, then haul in. When the end is in to drum, disconnect old chain by reversing engine.

TRUCK FOR ROOFING TILE.

Extra Length in Wagon Provides for Big Load Without Crowding.

While the length of the wagon shown seems excessive to the American, the use of such trucks is said to be by no means uncommon, abroad, and it seems to be a most convenient arrangement. As described in the “Tonind Zeitung,” the wagon is 12 ft. long, 5 ft. wide, the sides being 20 in. high. In the center of each side is a door which is hinged at the bottom and opens outwards. The wagon is made specially long and wide so as to carry a full load without the tiles being piled too high on each other. It is easy to turn it in a small space owing to the position of the wheels. In packing, the tiles in the center are placed in rows across the wagon, but the two rows nearest the sides packed lengthwise of the wagon. The unpacking should take place in precisely the reverse order.



Ingenious Roofing Tile Wagon or Truck, Especially Designed to Lessen Breakage of Ware.

Stacking Face Brick in Yards.

Where the soil is of a spongy nature it is unwise to store fancy face brick on the yards so they will come in contact with the ground. The most suitable store for face brick is, obviously, a shed with a well-drained floor, but the cost of its erection is often considered to be too great to be remunerative. Yet, so far as most newly made brick is concerned, it is very unwise to leave them exposed to the weather, and, above all, to severe rains which are followed by frost. This is not because of the effect on their durability but because of the damage that may be done in discoloration. One means of overcoming this difficulty consists in arranging planks on a few widely-spaced brick and erecting the stack of brick on these planks. The necessary protection from rain may then be afforded by a number of tarpaulin sheets. On ground covered with ashes or other material likely to yield soluble salts to the brick, it is essential to use some device of this sort if it is desired to keep the brick free from white efflorescence or "scum." In such a case it is also desirable to keep the supporting planks well covered with tar, as this will prevent water from the ground rising through the lowest brick and creeping over the planks.

Figuring the Cost of Weather.

You can figure on how much clay you have got in a given space, how it burns, what machinery is required to handle a given amount of it, the best temperature for burning, and a number of other points you can settle to a reasonable degree of certainty, but no man can tell what the weather is going to be, nor how it is going to affect the cost of making brick, says the Brick and Pottery Trades Journal. That is perhaps the reason why many a man's cost figures go wrong and he comes out at the end of the season with a balance on the wrong side in spite of the fact that by his careful reckoning he should have come out ahead of the game. If one will keep a weather record, together with the amount of cost and damage each season, he may, in the course of a few years, have data that will be a fairly reliable guide to figuring allowances for the weather. There is some guess work in it even at that, but it is a whole lot better than leaving the weather entirely out of consideration when figuring out what it should cost to make brick.

Core Cracks in Brick.

Center or core cracks in wire-cut brick usually are caused by irregularity in the speed of the column of clay as it leaves the machine. These cracks seldom reach the surface of the brick and, therefore, are not detected until the ware is taken from the burned kiln in a broken state. It is well, if this trouble comes up, to take a few brick direct from the machine and cut them in two, examining the cut surfaces for cracks. It is also advisable to measure the speed of the moving clay column. If the center of column is moving slower than the outside, core cracks in all probability will result. Rapidity in drying will increase these cracks.

Visit Your Neighbor's Yard.

Study not only your own business problems—but study the solution of other men's problems—not only the solution but the method by which the solution was reached. It is not so much in knowing a good brick when you see one but in knowing how it was made and the various steps taken and why, that is important. Visit your neighbor's plant and see how he does things—the chances are you will come home the wiser for your trip.

Useful Little Hints

Use turpentine instead of oil when drilling hard steel.

A drop of nitric acid on steel turns it black and the harder the steel the darker the spot. Acid has no effect on iron. This makes a simple test to determine which is steel and which is iron.

Some machinists make use of vaseline for keeping tools bright; others use kerosene, and still others find nothing better than fine olive oil put on very thin and then wrapping the tools up in strong tissue paper coated with oil.

Hard and impure water is a costly thing to use around your power plant. It means scale in your boiler. This brings bagged and burned tubes, leaky boilers, possible explosions, cleaning expense, extensive repairs, loss of fuel and—well, you can figure the rest.

When a U bolt breaks on the steam shovel and you wish to put in a new one, with the saddle block and dipper handles in place, drill the ends of the U bolt for small eye bolts, tap them, drop the two ends of a whistle cord through the holes in the saddle block, attach these ends to the eye bolts and hoist away.

Do not neglect your belts. If you give them proper care you will increase their efficiency and life. Follow carefully the instructions the manufacturers send with their belts. This advice usually is based on a wide experience with their own products and may be followed to advantage invariably.

Soap is one of the best and cheapest of die lubricants. Dissolve 10 pounds of cheapest soap in 100 gallons of water. Use it in a tank about 50 feet above the brick machine to get the necessary pressure. The amount given will lubricate perfectly 100,000 to 150,000 brick at a cost of about $\frac{1}{3}$ cent per thousand.

Suggestion for "Stuffing" Tile.

Editor "Brick and Clay Record":—If your correspondent, "Utah," who had trouble with his six-inch tile cracking, and inquired if stuffing one tile in another makes any difference, had stuffed a three-inch tile into the six-inch instead of the four-inch which fit the six-inch, altogether too tight, he would have had no trouble with the six-inch tile cracking. The same principle will apply to all sizes of tile. Stuff them, but allow room for the fingers between the outside of the small tile and the inside of the larger tile.

ILLINOISAN.

About Use of Dynamite.

One reason why charges of dynamite sometimes fail to explode is that a strong enough detonator is not used. Gelatine powder loses its strength with age, and a cap that will answer the purpose with fresh sticks may not be effective with older ones. Not only is there great risk of accident from unexploded charges, but a weak cap is doubly poor economy, for even if all the powder be exploded, it is certain that the sticks furthest away from the cap are merely burned up, and do no work whatever. And the greatest danger lies in the possibility that while to all appearances the shot has been successful, only the upper part of the charge has exploded and left the lower intact.

Questions and Answers

67. *Havana.*—*What can I add to a white clay in order to obtain a red brick? I have tried several chemicals but failed to produce a red brick except by adding some red earth.*

The red color in brick is caused by the presence of oxide of iron the difference in shade being due to the amount of iron present and to the degree of heat maintained in the burning process. The effectiveness of iron as a coloring agent depends not only upon the quantity used but also upon its degree of oxidation and upon the physical and chemical condition of the clay so that the shades produced are numberless, great skill being necessary in the treatment of the raw material in order to produce approximate uniformity of color in the finished product. Your clay evidently contains much aluminum and little iron. Clays containing little alumina and much iron burn red.

Another method of coloring brick red is by the use of a sand molding machine, which covers the brick with a thin coating of red sand while in the mold, these brick burn to a rich bright red and are uniform in coloring.

Still another method is to add red sand or red burning clay to the white clay while in a plastic state.

51. *Indiana.*—*Is it practical to burn drain tile and roofing tiles in the same kiln at the same time?*

If they can be set securely, there should not be any difficulty experienced in burning the two articles together. Owing to the difficulty in setting drain tile so as to form a steady base for the roofing tiles, a good plan would appear to be to set the pipes vertically against the wall of the kiln, as high as convenient and reserve space in the center of the kiln for the tiles, thus avoiding the risk of spoiling either as setting the roofing tiles at the bottom of the kiln would likely result in their being over burned or warped by the weight above them. It is presumed an ordinary round down draft kiln is to be used.

51. *Montana.* *I am interested in the article by R. T. Stull in your December 15 issue and desire to know if dies for producing veneer brick are on the market and where they may be procured.*

We are informed that there is a patent pending on the veneering die and that Mr. Stull, University of Illinois, Urbana, Ill., is in position to install same on the royalty basis.

72. *Colorado.*—*How many tons of mine run coal are usually required to burn a round down draft kiln of 9 x 4½ x 2½ inch fire brick containing 60,000 to 65,000 brick, kilns being 30 ft. diameter? How many tons of slack coal are usually required to burn such a kiln of fire brick? How many days are required to water smoke such a kiln? How many hours to burn after water smoke is completed, that is, after brick are dry and just before a glow can be seen in the kiln?*

It is impossible to answer the question without more data and even then only an approximate answer can be given. Fire bricks may be burned at temperatures as low as Cone 1, but they may go to temperatures above Cone 20—sometimes it is claimed as high as Cone 28. Naturally there would be a wide difference in fuel consumption between temperatures of Cone 1 and Cone 28.

The next factor which enters into the question is that of the character of the fuel. Coal varies from 6,000 to 7,000 B. T. U. up to 15,000 B. T. U. and naturally we would expect to use twice as much and more of the low grade fuel in comparison with the high grade fuel.

The third factor is the character of the kiln. The walls may be thin, the crown unprotected, the kiln badly cracked and in such a kiln the radiation and leakage loss may be double the loss in a better constructed kiln, and since the radiation loss may run as high as 50 per cent of all the fuel used it can readily be seen that there is considerable chance for waste of fuel which we cannot in any way accurately determine.

There is a fourth factor and that is in the work of the fireman, together perhaps with the type of furnace. We may illustrate by calling attention to the difference in boiler firemen. Nearly every plant has had experience in good and bad boiler firemen, and in this work it is easy to determine a good fireman and a poor fireman. The one keeps up steam with apparently little labor and small consumption of fuel while the other works himself to a finish shoveling coal and cleaning fires, and still is unable to keep up steam. Now, we have the same good and bad burners in the kiln work but here unfortunately we have no steam gauge to determine when the burner is doing good work and when he is doing poor work.

68. *California.*—*In the February issue of "Brick and Clay Record," page 182, a correspondent inquires about a small continuous kiln and you answer that a recent invention makes one possible at a cost of \$3,000. I am looking for the same thing and would like further information and the name of the maker.*

(1) The kiln was described in detail in the December 1 issue of the journal. (2) The kiln and the name of the maker are advertised each issue in this journal.

69. *Pennsylvania.*—*The writer and associates have recently purchased a brick making plant, which is fully equipped for making dry-pressed face brick except it has only one kiln, this means that we must install more kilns. We secured a copy of your journal, "Brick and Clay Record," of Feb. 1, and notice on page 182 under questions and answers "50, Illinois" that there is a continuous kiln now being made that can be used for a small plant and the price is reasonable. Can you put us in touch with the builder or the builder with us?*

Correspondent and others who make similar inquiries are referred to 68 California above for answer.

88. *Tennessee.* *We are having trouble from die laminations and would like for you to suggest a remedy for same. We have a very short clay. After it is loaded on cars with drag scrapers, it is pugged in a 12-ft. pug, with two rows of knives in the central shaft, then it goes to a Chambers end-cut machine, using a 1½ turn auger, then through a Chambers lubricated die. The die is lubricated with cheap black lubricating oil. Any help that you can give us will be appreciated.*

"Brick and Clay Record" published an exhaustive article on auger and die lamination, December 15th, 1912. If your trouble is altogether at the die, it is undoubtedly due to the transmitted pressures applied to the clay opposing the lubrication. In order to be effective, an equal pressure to that applied to the clay should be applied to the lubricant.

80. *Canada.*—*Can you tell us what the record run is for a stiff mud auger machine, working ten hours?*

A year or so ago the record of 354,000 common brick per day was made on a Chicago yard. This record, we understand, has since been exceeded, the highest we know of being 357,000 per day on another Chicago yard. If there are any better records let us hear of them.

Monthly Tablet

Ancient Order of Chaldeans

Issued Under Authority of
The Supreme Temple
Chicago

Officers of the Supreme Temple

Supreme Venerable Nebo	W. D. GATES
Supreme Learned Fo	WM. SCHLAKE
Supreme Exalted Philosopher	F. W. LUCKE
Supreme Keeper of Tablets	IVERSON C. WELLS
Supreme Keeper of Shekels	L. D. BINYON
Supreme Chief of Guards	W. J. GILBERT

Supreme Council of High Priests—Charles B. VerNooy, Supreme High Priest, Ka., Louis D. Binyon, H. G. Bowstead, E. K. Cormack, R. M. Combs, James A. Hogan, Herman L. Matz, C. L. Rorick, H. H. Rosenberg, William C. Varney, Iverson C. Wells and F. G. White.

(NOTE: Address all communications to Iverson C. Wells, Supreme Keeper of Tablets, 445 Plymouth Court, Chicago)



Your Membership Card.

Membership cards are being mailed and should any member not receive his, it is because of an error in address and the cards are held for correction. It is imperative, therefore, that any one failing to receive this signal of his good standing in the Ancient Order of Chaldeans notify the Supreme Keeper of Tablets at once. Two cards have been issued in accordance with the constitution and by-laws. One card is given to each of the first one hundred applicants to Chicago Temple No. 1, the same indicating that the bearer is a member of the Sacred College of Ancients. These cards bear no numerical numbers. The second card is given to each of the remaining 309 applicants who received the adoption degree on the evening of March 5 at the institution of Chicago Temple No. 1. The holders of these cards will be recorded on the Tablets as original or charter members. These cards bear numerical numbers, beginning with No. 101 and continuing consecutively in the order of the applications filed up to and including No. 409. New cards will be issued annually, being dated from March 5, invariably.

The New Buttons.

Additional designs for the proposed new emblem buttons have been submitted and it will be several weeks before a decision can be made and the emblems prepared for distribution. The committee that has this work under charge will make its decision in a few days and it is hoped that a reproduction of the one selected can be printed on this page May 1. The buttons will be solid gold and sold at \$1 each. Those anxious to wear one of the first buttons issued can send their orders at any time to the Supreme Keeper of Tablets.

Supreme Council of High Priests Meet.

The Supreme Council of High Priests met on the evening of April 4 in the temporary Supreme Temple at the Hotel Sherman and laid plans for continuing the work of spreading the teachings of the Ancient Order of Chaldeans. It was decided to call a special meeting of Chicago Temple No. 1 on the evening of May 2 at which time several new candidates for adoption will be given the work. In the meantime the floor team—the same that put on the work at the first meeting of the Temple, March 5 last, will be called together for rehearsals and it is promised that it will be ready to exemplify the ritual in a

finished manner. The financial report of Supreme Keeper of Shekels Binyon shows that \$1,227 has been collected as membership fees and dues and that of this amount there remains in the treasury \$390, the sum of \$837 having been expended on the entertainment on the evening of March 5. There are still some outstanding bills which will reduce this surplus considerably and a more complete report will be published when all obligations are cancelled.

Notice Chaldeans.

The meeting of Chicago Temple No. 1 announced for April 16 has been postponed until May 2. Place of meeting will be announced in a special card to be mailed in due time. Members of Chicago Temple who reside out of the city but who may be in Chicago at the time are urged to be present. It is expected that several new candidates will be initiated into the mysteries of the Order.

Chaldean High Priest Meets With Painful Accident.

Rogers M. Combs, vice-president and sales manager of the Thomas Moulding Brick Co., and Exalted Philosopher of Chicago Temple No. 1, Ancient Order of Chaldeans, was thrown from a north-bound Indiana Avenue car the evening of April 7th, sustaining severe contusions on head, arm and knee. His superb constitution and iron nerve stood him in good stead for, after receiving the ministrations of a physician, hastily summoned to the Auditorium Annex, he was able to reach his Hyde Park home unassisted. Subsequent going over by the family medicine-man convinced Bro. Combs that he was hurt worse than he imagined and the result was he was confined to the house for several days. He is "back on the job" again, a little scarred, but, as he says, "still in the ring."

ORGANIZE NEW TEMPLES

Whenever there are 20 or more Chaldeans in a community a local temple can be formed. Look over the list of members that will be published in May 1 issue and get busy. The first application gets the first temple.



STUDIES PAVING AT CLAY SHOW.

San Francisco Engineer Comes to Chicago to Inspect Brick and Reports Favorably.

San Francisco, the metropolis of the Pacific Coast, has sent Assistant Engineer James M. Owens of the City Engineer's office of that city to make an official investigation of the relative servicableness of the different kinds of materials used in street paving in the larger western and eastern cities.

A large percentage of people in the California metropolis are advocating at the present time that many of the streets be repaved, and that the work be characterized by quality of material and reasonableness of cost to the tax payers.

Mr. Owens came to Chicago to study paving conditions and to attend the congress of the clay products manufacturers. He obtained statistics on street paving in Chicago from the local authorities and made trips of inspection to the various thoroughfares that are brick-paved in this city. He also made a study of the value and utility of streets that are paved with wood and stone blocks, but

Powell Street can be said to be perfect. It is as even and solid as the day it was first laid.

"After my investigation of paving conditions, in Chicago, I will go to Cleveland, and from there to Cincinnati, and a few other of the eastern cities. My inspection of streets in these cities will be thorough and complete. The information that I glean from my study of street paving during my trip will be incorporated in my report to City Engineer O'Shaughnessy, of San Francisco, who, at the request of the mayor, delegated me to gather the data in question.

"I expect that this report will be read to the city council in about two weeks, and its recommendations will then be fully considered by the aldermanic body.

"Many business men whom I have met in Chicago are in favor of brick paved streets. For relative cheapness and serviceableness, the sentiment among your city officials indicates that the paved brick thoroughfare is the most preferred type of street.

"I am much interested in the use of this material for street building. I think that my study of paving conditions in the cities I will visit will prove to me conclu-



Bitullthic Pavement on Main Street, Hutchinson, Kan., Being Removed After Four Years' Wear, to be Replaced by Vitrified Brick.



Solid Vitrified Brick Pavement Which Replaced Bitullthic Pavement on Main Street, Hutchinson, Kan.

on the whole Mr. Owens declared that he was chiefly interested in the brick-layed streets.

"We have experimented to some extent with paving brick in street building in San Francisco," said Mr. Owens, "and we have been very favorably impressed with its showing. For instance, we began by paving Powell Street with brick from O'Farrell to Ellis Streets, a distance of 275 feet. The Seattle Brick and Denny Renton Brick and Clay Companies, of Seattle, furnished the material. The brick used was salmon colored. The street was paved on a six-inch base and with one and one-half inches sand, and one-half inch asphalt filler. Cement filler was used in the joints of the brick.

"This street was paved six months ago. The traffic running over it is composed of automobiles, express wagons and occasional trucks. Up to date, the condition of

sively that paving brick is the one and only thing for all around traffic purposes.

"According to the street laws of San Francisco, we are permitted to use brick for paving work. Thus there will be no legal hitch if the city council votes to have paved brick streets in San Francisco. The general opinion of people in our city seems to indicate that the wood or stone block streets are becoming things of the past for ordinary traffic use. Thus it is quite possible that a revolution in paving material for cities will transpire before long. The brick sentiment is certainly growing in the popular mind.

The city council of Houston, Tex., has adopted resolutions for the paving of nine miles of streets. The materials to be used are asphalt, brick and wood block.

Experience is the Best Teacher

How about your boy? If the teacher were to report to you that your boy, after two years of school, didn't know his alphabet, what would you think about it? You would begin to think that Providence had sent you an idiot. Suppose later you took the boy from school and put him at work firing the boiler; suppose you found that the boy insisted on throwing half the coal in the dump heap and the rest under the boiler. Then you would be sure you had a "Mutt" in the family and you wouldn't stand for his idiotic idea about wasting half the coal; it would be too expensive to put up with.

How about the "old man"?—you're full grown, have family cares and business responsibilities. You are using twice the fuel necessary to dry and burn your product. Since we have told you about it, if you still keep on throwing half your fuel away, are your actions more sane than those of the boy?

Let us show you all about the saving we can give you. Let the "Experience of others be your Teacher," then accept the lesson or not, as you please.

With our Waste Heat Dryer we can take the waste heat from your cooling kilns, saving practically all your drying expense and deliver better dried brick and delivering them more regularly.

The Haigh Continuous Kiln is another wise economy in any plant. It will burn your product at practically one-half the ordinary cost. Here then are two cost saving features, either of which means increased profits. We will be pleased to hear from you about the installation of either or both. Let us give you an estimate of the expense and an estimate of what you can save. Then you will be able to compare the figures and decide on the advisability of installing a dryer, the Haigh kiln or both.

We built a lot of economy producing machinery for making every class of clay products by all processes. If you want the largest possible profits, we can help you by saving on your production cost.

Correspondence Solicited



The American Clay Machinery Co.
Bucyrus, Ohio, U. S. A.



Much the largest manufacturers of Clayworking Machinery in the world. And much the best.

Sewer Pipe

The Robinson Clay Products Co., with general offices at Akron, O., and which operates a number of plants throughout the Central Ohio territory, recently closed a deal for the purchase of 124 acres of additional property from John Kantz, of Strasburg, O. This property lies in the vicinity of the Crown Clay Co., of Strasburg, and is admitted to be underlaid with a fine vein of clay.

The United States Sewer Pipe Co., has awarded the contract for the construction of six additional kilns at its plant at Annabelle, W. Va., to W. H. Ebsary, of Buffalo, N. Y.

In the East Ohio district, the heart of the sewer pipe production, the story is current that the East Ohio Sewer Pipe Co., of Irondale, O., which is managed in an able way by Fred Owsney, a resident of Steubenville, that the company will double the capacity of its plant by the erection of a duplicate plant on an adjoining site. The East Ohio company is one of the largest of the independent operators in sewer pipe, and during the last few years its business has grown at a most remarkable rate. Hence the plans for enlargement.

Vitrified Clays, Limited, has been duly incorporated to handle the products of the American Sewer Pipe Co. in northwestern Canada and the northwest and Pacific states. The head offices of the new company are located in the Burns building, Calgary, Can. The concern will give special attention to sewer pipe and the patented segment sewer blocks, a product recently put on the market by the American Sewer Pipe Co. The vice-president and general manager of the new company is A. H. Stowell, who is well known to the engineers, contractors and municipal authorities of Canada. He formerly covered that territory for the American Sewer Pipe Co.

N. Clark & Sons of San Francisco and Alameda, Cal., was the first Coast concern in the brick and clay line to reap direct advantage from the Panama-Pacific Exposition. This company will supply the sewer pipe for the extensive sewer system to be installed on the exposition grounds. The contract for the entire sewer system was awarded to Michael Murphy, and he has now contracted with N. Clark & Sons for the pipe, which will be turned out from the company's Alameda yards.

Among the recent contracts let for sewer pipe, we note that at Webb City, Iowa, 2,660 feet of 8-inch clay sewer pipe will be used, and that at Long Island, N. Y., a sewer will be constructed of clay pipe; 1,250 feet of 8-inch clay pipe will be used at Estherville, Iowa, and a contract calling for 12-inch pipe was let at Bay City, Mich.; about 5 miles of 8 to 20-inch clay pipe are to be laid at Bend, Ore.; at Clarksville, Tex., a sewerage system and disposal plant will be installed; at Lexington, Ky., \$200,000 will be spent to build a main sanitary sewer, purification plant and storm sewerage system; at Ashland, Va., an ordinance has been introduced for the issuance of bonds for installing a water and sewerage system, and at Colonial Beach, Va., a new sewer system will be installed. Dixon, Ill., will lay 14,000 ft. of 6 to 15 inch clay pipe and Canton, Ohio, will construct vitrified pipe and brick sewers to the value of \$55,000.

Drain Tile

Some time ago, one of our subscribers wrote us asking for information as to what means to use in riding his land of alkali which had rendered it barren and worthless.

We are pleased to know that the U. S. Department of Agriculture, Washington, D. C., has considered this matter of "Drainage of Irrigated Lands" of sufficient importance to warrant an investigation by the Drainage Department and has issued Farmers Bulletin 371, which contains valuable instructions in regard to treatment of alkali lands.

The problem has reached big proportions and the general need for drainage of irrigated lands has increased rapidly during the last twenty years. The most productive lands of these regions and those which were first brought under cultivation are, in many instances, now abandoned or fit only for wet pasturage. In Utah alone there are approximately 200,000 acres of irrigated lands needing drainage. Salt Lake Valley has about 34,000 acres of such lands, and several other valleys from 10,000 to 30,000 acres each. There are several localities in which, of the total irrigated lands, 50 per cent are in such condition. California, Colorado, Washington, Montana, and Wyoming are likewise affected, more or less, and in time all of the newly irrigated lands will have their problems of drainage. It naturally devolves upon the holders of such lands to reclaim them. To the end of developing the best methods for accomplishing the reclamation of such lands the Office of Experiment Stations has conducted drainage investigations in Utah, California, Oregon, Washington, Wyoming, Colorado, and Nebraska, with results which justify the conclusion that there is scarcely any land in the irrigated region which formerly produced paying crops, and later became affected by excess of water or alkali, that can not be profitably reclaimed, provided the work is correctly planned and carried out. These results also point to the possibility of reclaiming many virgin lands containing an excess of alkaline salts.

This bulletin, while it applies to all irrigated lands and contains some data obtained in investigations in other States, is based upon experimental work done in Utah. The drainage investigations of the Office were begun in the State during the summer of 1904 in co-operation with the Utah Agricultural Experiment Station. Since then the work has been carried on with a fund provided jointly by the State legislature and the Office of Experiment Stations, the Utah station acting for the State.

Since there are vast areas of such lands, in our country which by proper draining could be reclaimed and rendered fertile once more, a great field for the use of tile should be opened up and publicity work along this line should be worked up by tile makers within shipping distance of such lands.

The report states that while open ditches are some times used that for many reasons covered drains are to be desired. In speaking of covered drains the report has the following to say anent clay tile: "Covered drains may be divided into the following forms: Tile, lumber boxes, stone, brush, and mole-plow drains. Burned clay tiles, chiefly in a round form and in 1-foot sections, have been in use for more than four hundred years and have proved satisfactory. They have been known to endure for one hundred years. The old idea that tile should be porous has been largely abandoned."

Pans For All Purposes

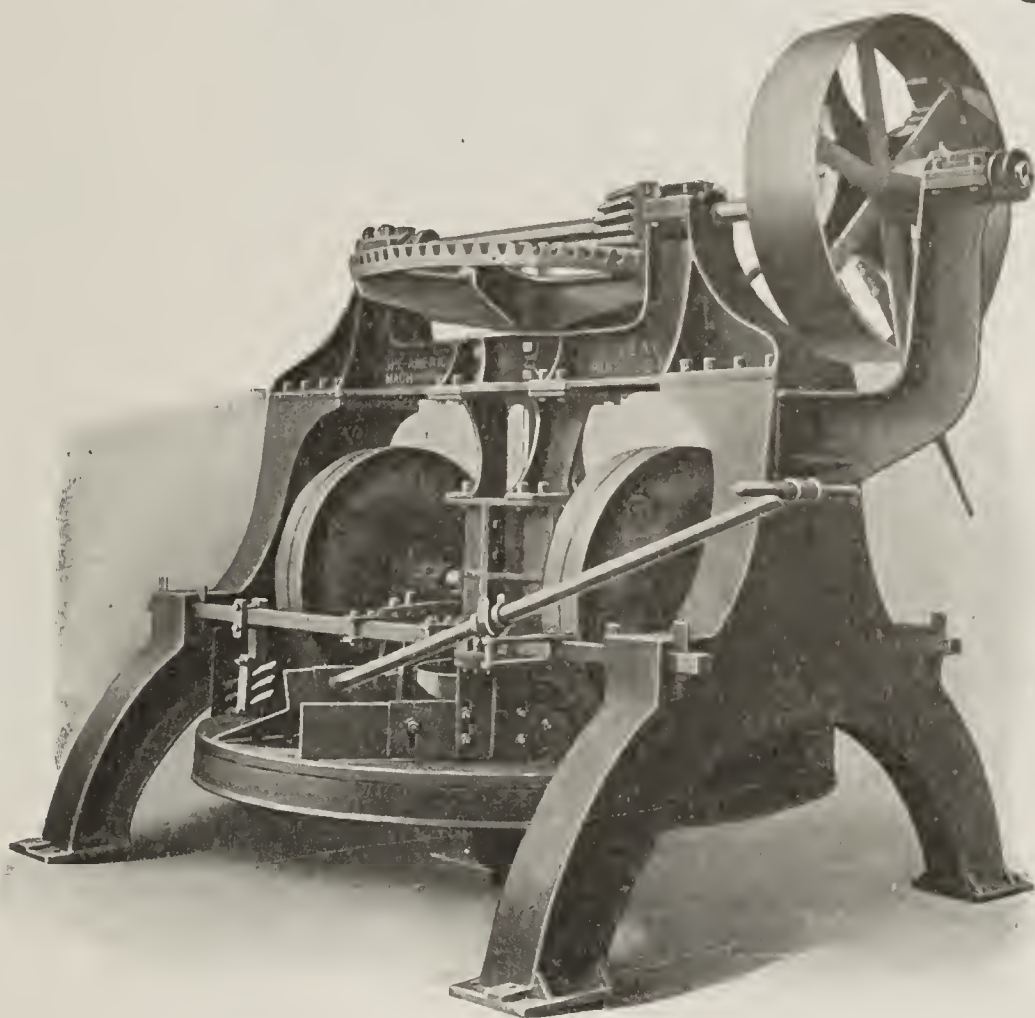
Grinding and Pulverizing

Pan Performance and Pan Promise

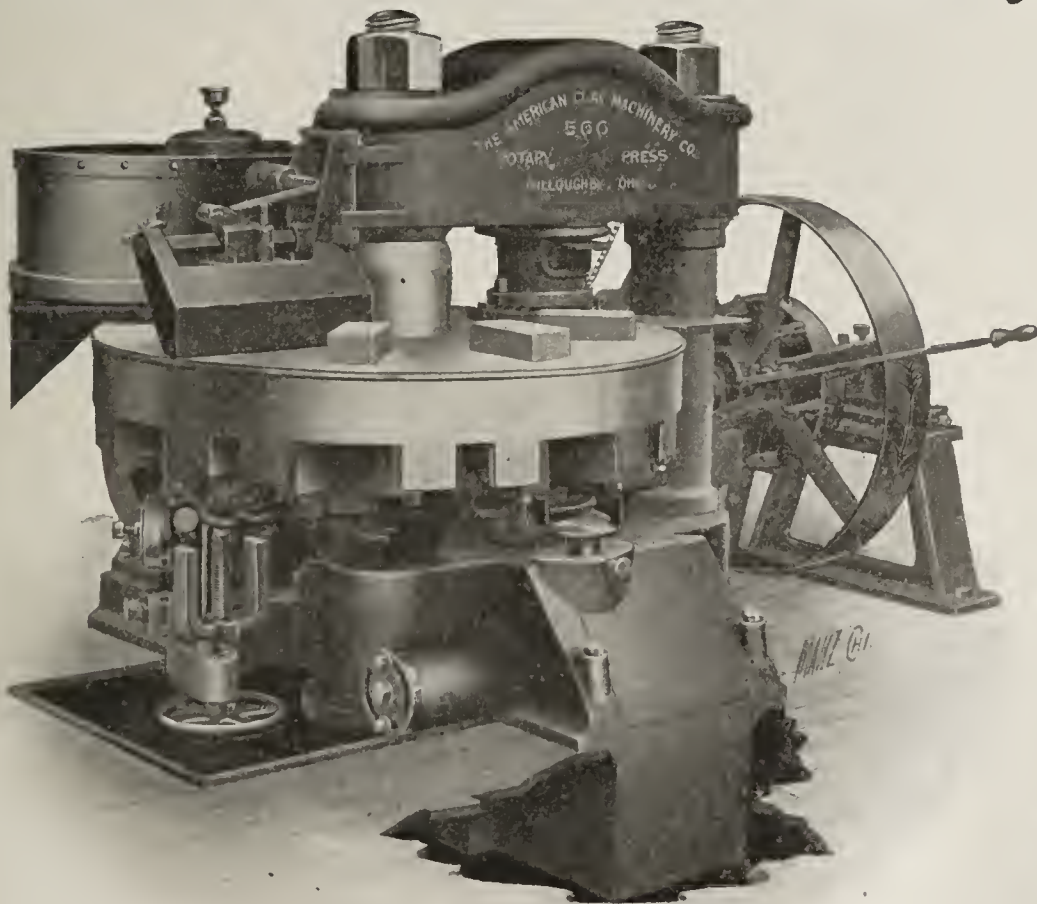
There is a lot of difference between Pan Promise and Pan Performance. Every American Clay Machinery Company pan is built with the one object of delivering PERFORMANCE up to and beyond every promise we make for this superior line. That's why we have incorporated in our pans all the "Success Features" possible and that's why we so carefully select the material and the workmen that have a part in American pan building. American pans have a high reputation because they deserve and sustain it. There are none better. We build clay machinery of all kinds.



The American Clay Machinery Co.
Bucyrus, Ohio



Sand-Lime Brick Machinery



There is a strain on presses for making Sand-Lime Brick which must be taken into account by the successful machinery manufacturer. It is just as important to the brick manufacturer, because a press of weak construction is sure to make poor brick, big repair bills and an unsuccessful business.

The American Company presses are the result of long experience, careful investigation, exacting designing and that thorough building for which American Machinery is noted. Not only in presses but in all machinery for making high-grade Sand-Lime Brick are our machines superior. We can help to make your plant successful. We have turned failure into success for others by putting them right on equipment.



The American Clay Machinery Co.
Willoughby, Ohio

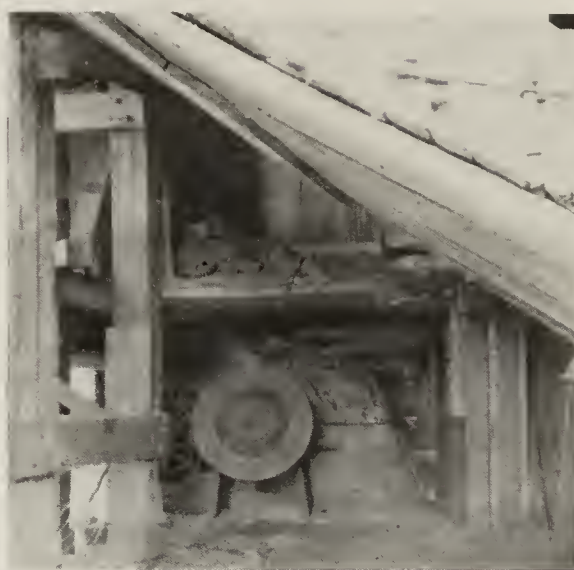
Much the largest manufacturers of Clayworking Machinery in the world. And much the best.

Makes Brick from Rock-Like Shale

CALIFORNIA PLANT SOLVES
A VERY HARD PROBLEM

WHAT WOULD YOU DO?

If your shale was flinty?
If your dry pan failed on it?
If your money was invested?
And you wanted to make brick?



The upper left hand picture shows the K. & K. plant with the quarry in the background. Below shows character of shale. The center picture shows crusher and the one to the right men shoveling the rock-like shale into cars.



Suppose you had several thousand dollars invested in a clay plant located on a deposit of shale which analysis showed would make the highest class product, and then, after you had gotten ready for business, and the steam was turned on and the wheels started, suppose you suddenly discovered the condition of the shale made it a difficult problem to use it, despite its admirable qualities?

This was the sort of problem that confronted the K. & K. Brick Co., of Los Angeles, Cal. This concern has an unusually fine shale bank, but it is so hard and flint-like the men no longer speak of the shale bank but call it the "quarry."

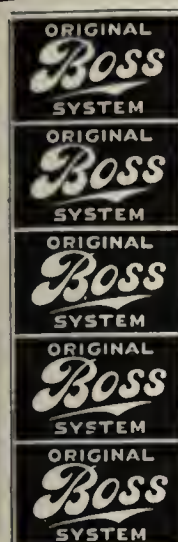
It was either a case of crushing this hard shale so it could be usable or abandoning the plant. Manager Kurbach had no idea of doing the latter. He recalled that two other California plants, those of the Carquinez Brick & Tile Co., and the Remillard Brick Co., had had similar experiences and looked up his "Brick and Clay Record" files. In the Jan. 1, 1911, and Aug. 15, 1912, numbers he found illustrated articles telling how the problem was solved by the installation of Williams' Deck Sweeper Crushers. He noted these two plants and convinced himself that he had found the solution to his problem.

A few months ago the Williams' Crusher was installed—one of the large No. 6 sizes. The K. & K. plant has been making brick ever since and shale troubles have ceased.

The accompanying photographs show the plant with kilns in left hand corner, immediately behind which, is the dryer with the quarry shown at top of picture. The tall portion of the building immediately behind the steam exhaust is the elevator from the Deck Sweeper and reserve ground material bunkers.

Material is taken from four portions of the deposit and with an industrial railway is hauled to the center of the quarry floor and dumped into a large bin below the surface. Then it goes to a car drawn by a horse through a tunnel in the side of a hill to the crusher storage bin immediately above the Deck Sweeper. A closer view of the interior of the hill is shown with tracks leading to center, also a view of the men loading one of the cars with average material from rock deposits.

The ware now made by the K. & K. brick people shows much better texture as the Deck Sweeper grinds finer than a pan and although the Deck Sweeper was supposed to have a capacity of fifty to sixty thousand per day, the K. & K. people have the machine set to crush coarser on account of so much rock in the material. The material is then run over an inclined piano wire screen, the tailings, if any, going to the old dry pan, which the Deck Sweeper replaces. It is estimated they are now grinding at the rate of seventy to eighty thousand per day, and next winter they expect to grind more than 100,000. The Deck Sweeper is run by electric power and is filling every promise made by its maker.



DRYING AND BURNING

A Common Sense Application

The Boss Ten Hour Dryer

Dries brick in ten hours time for less than 5c per thousand.

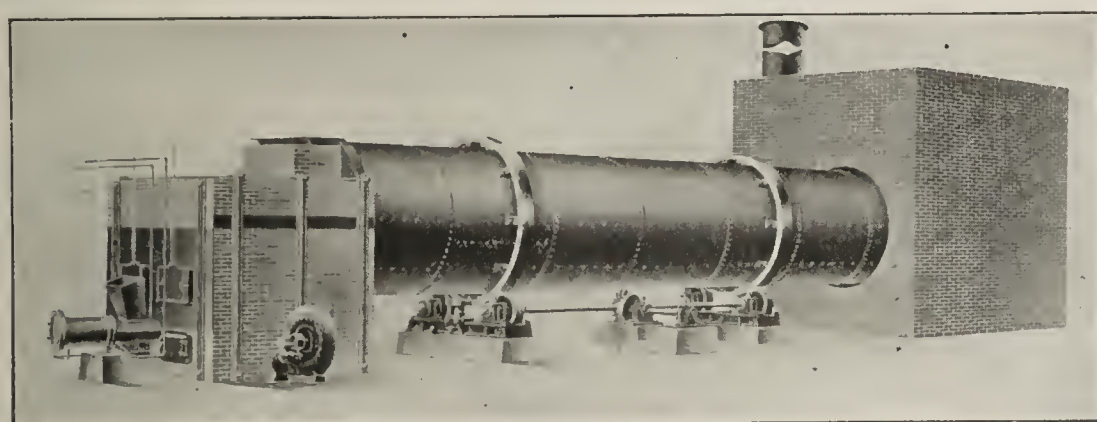
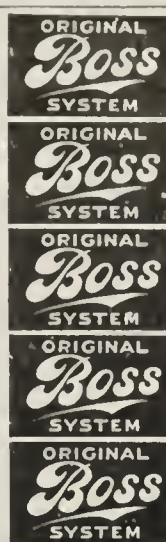
The Boss System of Burning Brick

Burn your brick with FORCED DRAFT and cut your fuel bill HALF IN TWO.

WRITE FOR CATALOG

JOHN C. BOSS COMPANY, ELKHART, INDIANA

ORIGINATORS OF THE PRINCIPLE OF DRYING AND BURNING BRICK WITH AIR UNDER PRESSURE



ROTARY CLAY DRYER

DRY YOUR CLAY

— AT LOW COST —

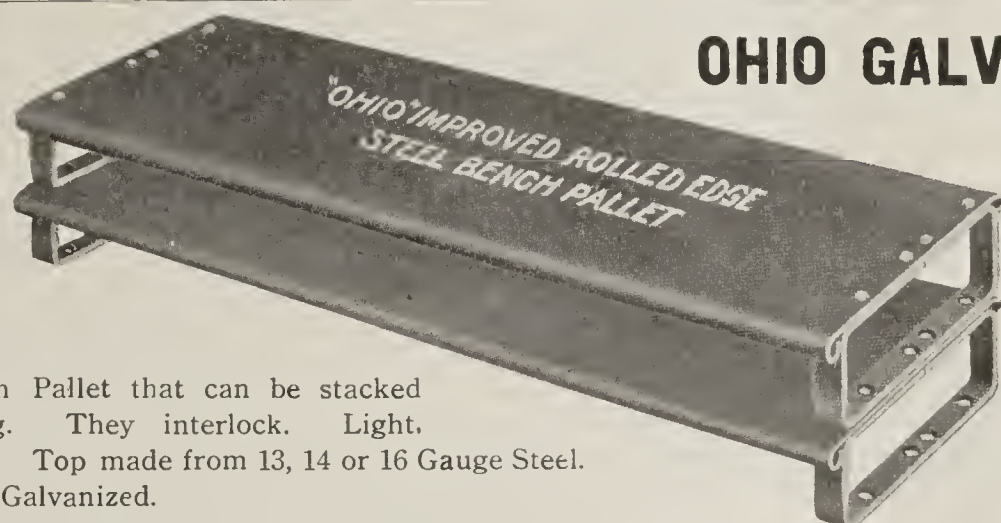
YOU CAN THEN OPERATE IN ANY WEATHER OR SEASON

It Assures Uniform Product

YOU CAN THEN SCREEN TO ELIMINATE PEBBLES, ETC.

American Process Co.

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NEW YORK



OHIO GALVANIZING & MFG. CO.

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Style No. 4

(Patented)

The only Steel Bench Pallet that can be stacked without slipping. They interlock. Light, strong and rigid. Top made from 13, 14 or 16 Gauge Steel. Either Black or Galvanized.

Modern Brickmaking

By A. B. SEARLE

440 Pages 260 Illustrations \$5.00 Post Free

THE NEWEST and BEST OF ALL CLAYWORKING BOOKS prepared by a famous authority in clay products manufacture, qualified to give the trade the latest and best information regarding clayworking processes.

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Mention "BRICK AND CLAY RECORD" when writing to advertisers.

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Mineral City, Ohio

Fire Brick for Kiln Work Made a Specialty

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ROBERT W. HUNT & CO., ENGINEERS

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EDGAR ALLEN AMERICAN MANGANESE STEEL CO.

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Cost less to purchase, install and operate than any other type of brickyard pump. They handle gritty water and never need lubrication.

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New York and every large city



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FISKE & COMPANY, Inc., Boston New York

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THE BUCKEYE ROLLING MILL COMPANY

Exclusively Manufacturers of First Quality Light Steel
Rails and Accessories

Offices:
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All Sections from
12 lb. to 40 lb.
per yard

Write or
wire us,
when in need.

No order too large to handle promptly or too
small to secure immediate attention.

Selling Brick

(Continued from page 620)

medium, in any sort of way, is likewise expected to open the purse-strings of Good Fortune.

Advertising is not guess work—it is a science, and if you haven't the time or inclination to learn it, better let someone else, who has mastered the subject, do your advertising for you.

Advertising means business news. One buys space to give the public INFORMATION about the product he makes.

If your copy does not do that it is not advertising.

I submit some current advertising on page 620, which was garnered from various sources. Nothing can better illustrate the haphazard way the average copy is prepared.

Take the ad, for instance, of the Georgia-Carolina Brick Co. Here is truly a good ad, spoiled by improper display. One-quarter of a page in a Sunday paper was used and yet with all this space I venture the average man, who saw it, turned his eyes elsewhere with a vague idea that perhaps it had reference to a liquor-cure sanatorium or a patent medicine shop.

How much stronger would this ad have been had it followed the excellent example of the Hydraulic Press Brick Co.'s ad on the left? Note the top display line—When you build, and then the cut of the house, which is almost obliterated by the reduction necessary to show it here?

This latter ad appeared in a recent issue of Collier's Weekly and cost a goodly sum. The Hydraulic Co. evidently spent some time in preparing this ad so it would not waste space or fail to accomplish its purpose.

One ad of the Standard Brick Co. of Evansville, Ind., which has been doing some excellent local publicity work, does not come up to the standard of previous ads I have seen. This ad, however, has the merit of having two things prominent in it—the word HOME and the word BRICK.

The smaller ad below of the Standard Brick Co., of Macon, Ga., has too much display and not enough "meat." The Denison ad has the same fault.

New Tariff Bill Hits Clay Products.

The new tariff bill, which has the approval of President Wilson and whose backers predict that it will pass the House and Senate, is even more drastic than anticipated. Its aim is to reduce the tariff on necessities and, unfortunately, clay products come under this head. Rates on all brick have been cut from 30.23 per cent to 10.28 per cent, tile from 47.84 per cent to 23.26 per cent, ordinary earthenware from 24.67 per cent to 15 per cent, and the rate on asphalt cut from 37.05 to 0.02.

The Dryer

Everyone who has tried to dry large refractory blocks is well aware that the greatest precautions do not always seem sufficient to obtain satisfactory results, and that, notwithstanding a large amount of care, the blocks twist and warp, and even crack, says the British Clayworker. The following hints will, therefore, be useful:

The mass of which the blocks are made should be as stiff as possible, so as to keep the quantity of water down to a minimum, for the larger proportion of water, the longer the time required for drying and the greater the risk.

It is unwise to commence the making of a block so near to closing time that it cannot be finished. To leave an unfinished block is often to court disaster, even when it is kept covered by wet cloths. Blocks which cannot be finished at the proper time may sometimes be saved by keeping them in the molds until they are wanted, provided that the mold is not in too hot a place. Directly the block is taken out of the mold, however, it should be put in a place where it can dry in a proper manner. Failure to effect the drying correctly is the chief cause of loss in such blocks.

It is not wise to dry large blocks on top of a kiln, for the temperature of such a situation is too irregular to give satisfactory results. One of the most essential features of successful drying consists in a steady, gradual rise of temperature at a sufficiently low rate, and, in the case of large blocks, this necessarily means a large amount of space, well sheltered from draughts. The required conditions are best met by a number of temporary partitions surrounding the goods, so that various compartments may be heated to different temperatures.

The course of the drying must be carefully watched, and the air-supply carefully regulated, commencing with moist air, and gradually replacing it with warm dry air. The ventilation of the drying room must be effected in such a manner that there are no local air currents of a nature likely to injure the goods.

A frequent cause of twisting, is the excessive adhesion of the blocks to the boards or floor on which they are placed. A little clay dust will usually obviate this, but in some cases it is necessary to dry the block on a slab of clay of the same stiffness as the block, so that the two will shrink together, and will allow all the cracking to take place in the lower and worthless slab. It is always desirable to dry all blocks on boards and not directly on the floor. For large blocks, laths carefully nailed to battens are quite suitable, provided that the space between each is quite small. If the mass is sufficiently stiff it will not press itself between the laths to any appreciable extent. To dry large blocks on the floor without a board beneath them invariably increases the proportion of damaged blocks, as it is most difficult not to spoil them in turning or lifting them. The use of a board or lath support facilitates the drying, and also enables the blocks to be turned quite readily.

According to a writer in the "Deutsche Toepfer Zeitung" blocks containing sawdust are much more liable to twist than those containing lignite or peat, the difference being particularly noticeable when burning the blocks. He claims that this difficulty may be overcome to a very large extent by boring holes $\frac{1}{8}$ inch in diameter, about an inch apart, completely through the blocks.

F. L. BARTLETT, Pres.

F. L. STOWELL, Mgr.

Sterling Brick Company

Manufacturers of

Olean Vitrified Paving Blocks
Dunn Wire-Cut Lug Blocks

OLEAN, N. Y.



Vitrified Shale Paving Blocks, Fire Clay Paving Blocks, Dunn Wire-Cut-Lug Blocks.

Paterson Clay Products Co.
Clearfield, Pennsylvania

Marion Brick Works
MONTEZUMA, IND.

MARION PAVERS

A Strictly High Class Paving Block

Also:

Fancy Face Building Brick, Colonials, Antiques, Etc.

The Danville Brick Company

Manufacturers of

The Unsurpassed Danville Paving Block

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LET US QUOTE YOU PRICES

Terre Haute Vitrifified Brick Co.

MANUFACTURERS OF

High Grade Vitrifified PAVERS

Samples Free

Address **TERRE HAUTE VITRIFIED BRICK CO.**
Arcade Building, Terre Haute, Ind.

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THE CELEBRATED EGYPTIAN PAVING BLOCK

THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

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SHAWMUT VITRIFIED PAVING BRICK WORKS

SHAWMUT, PA.

Alfred Yates, Gen. Mgr.

Vitrified Shale and Fire Clay
Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

PURINGTON PAVERS

ARE MADE OF



The Purington Paving Brick Co.
GALESBURG, ILL.

Kiln and Burner

The following suggestion is made by Alf. Satre, 3108 Columbus Ave., Minneapolis, Minn., and meets with the approval of this journal. Suppose our readers carry out the idea. "Brick and Clay Record" will print the data obtained:

Editor "Brick and Clay Record": I believe it would be of mutual benefit and interest to all clayworkers if as much correct data as possible could be collected regarding fuel consumption in the different kinds of kilns and under the most varied conditions.

In order to obtain the most value from this information to make safe comparisons we should have the following questions answered.

1. What is the character of your raw material? (a) If plastic, short, etc., or if it contains pebbles or lime. (b) Behavior in drying. Shrinkage and how long it takes to dry. (c) Behavior in burning. Shrinkage and how long it takes to burn. Number of Seger cones used at top and bottom.

2. What kind of ware are you making?

3. What type of kiln? (a) Size and capacity. Thickness of the walls and if enclosed or open kiln. (b) Type of furnace? Width and height of same and how many of them per kiln. (c) Kind of gratebars, including step-bars, flat-bars or no bars, and the grate area in furnace.

4. How much coal used in tons per burn (in average of at least 10 burns)? Kind of coal, if clinkering or not.

5. And if possible an analysis of the flue gases.

If all this information could be gathered from as many as possible and published in one of our trade journals it certainly would result in helping many to save fuel.

The arches in continuous kilns require special care and skill in construction. They should be of brick capable of resisting the heat to which they will be exposed and, therefore, of the same quality used in the lining of the kiln. The brick should be laid so that only their ends are seen from the inside of the kiln. A second arch should be built over the first. Properly designed wedge-shape or "arch brick" are preferable, but with arches more than 10 feet in diameter they are not really essential. The strongest arches are true semi-circles, but other considerations sometime make the use of smaller arches necessary.

When the kiln has been burned three or four times and all the joints have been carefully repaired, coat it with tar to protect it from the atmospheric conditions and to prevent air leaking in through the walls. This coating should be given once a year as it not only preserves the kiln, but saves fuel. An internal coating or wash of glaze sometimes is applied for the same reason.

Electric pyrometers are essential to the first-class burner. By their use he not only finds them a safeguard but a perfect register of the heat every hour and eliminates guesswork absolutely.

Every burner should be equipped with a set of Seger cones. After he once determines what numbers he needs for the best results in finishing the kilns, he can get a more uniform burn by their use than without them.

In firing up a kiln of pavers' shale brick, pipe or tile, if black smoke rolls out of the stack during oxidation, punch a hole over the coal in the firehole. This assures consumption of at least part of the carbon, creates oxidation conditions, tempers the heat with air, prevents too early vitrification and the closing of the pores of the ware.

Common Brick

(By Special Correspondence.)

Independence, Kas., April 4.—Five of the leading brick manufacturers of Southern Kansas met at Independence April 2 to "talk shop" and to go over business conditions in general. Those in the conference were J. E. Exner of Coffeyville; B. E. Ladow of Fredonia, F. A. Nicholson of Iola, J. J. Amos of Humboldt and W. B. McFarland of Chanute. These men all represented "common brick" plants. The brick industry has suffered considerable in Kansas by unfavorable business conditions during the past few years, the failure of gas resulting in the closing of many plants. In 1906-07 there were over thirty brick plants making common brick in Southern Kansas. Now there are only seven such plants, as follows: Iola, two plants, capacity 50,000 each; Humboldt, one plant, capacity, 60,000; Chanute, one plant, capacity 100,000; Fredonia, two plants, capacity 100,000 each; and Coffeyville, one plant, capacity 100,000. The meeting was devoted largely to a discussion of the business outlook. Each maker reported the amount of stock on hand and the business conditions over the country so far as he was familiar with them, thus preventing an overproduction by taking the outlook into consideration in the operation of the plants.

The signing of the subway contracts in New York City last month has great significance as far as the building material markets of the East are concerned, with especial reference to common brick. Ever since the dual subway system was talked of there has been a determined effort made among brick interests to bring about a larger consumption of common brick in subway construction than was the case when the MacDonald tubes were built. As far as actual results of this quiet campaign are concerned it is a matter of conjecture as to the actual increase in the volume of brick to be used in the new tubes, as against that consumed in the existing tunnels, but this fact is certain: that tremendous pressure has been brought to bear for the last two or three years upon the New York Public Service Commission and upon others in authority with the result that engineers are much more in favor of the larger use of common brick in the great work than they were ten years ago. Incidentally this may be said without fear of contradiction, that if nothing more has been accomplished than bringing to the attention of these engineers the superior virtues of brick over reinforced concrete for work of this character, the campaign has not been devoid of results. If the same rule of figuring brick quantities prevails in the new subway construction that has followed in building work; namely, 300 brick to the ton of steel, the new subway will consume about 37,500,000 common brick, based upon an estimated steel consumption of 125,000 tons.

Large stretches of Manhattan streets have been tunneled and are practically ready for steel and other basic material, but, of course, the major part of the subway is yet to be excavated. It is naturally to be supposed that the demand for brick will not be seriously felt until, say, about the middle of next summer, when the subway orders will begin to be filled. Of course there will be some demand for brick as there is now for roof construction in the subway already excavated. In the meantime, there is great activity among the Hudson river yards, which are being reopened for the season.

THE DECKMAN-DUTY BRICK CO. CLEVELAND, OHIO.



THE HOME OF MEDAL BLOCK AND
THE BEST BRICK PAVED CITY AND
COUNTY IN THE WORLD

FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

— MANUFACTURERS OF —

Dover and Buckeye Fire Brick

Unexcelled for Kiln Purposes

509 Cuyahoga Bldg.

Cleveland, Ohio

A J A X FIRE BRICK



Two of the many hundred kilns built of these famous
brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.

195 So. Clark St., CHICAGO

CLAY & DRYER CARS

We Sell and We Rent

Cars — Rails (from 12 to 70 lbs.) in Stock

**KOPPEL**

Switches, Frogs and Turntables

SALES OFFICES

New York, Pittsburgh, Chicago, San Francisco, Montreal

Plant: KOPPEL, PA.

ORENSTEIN - ARTHUR KOPPEL CO.

**Face Brick**

A very important meeting of the directors of the American Face Brick Association was held March 24 at the Ft. Pitt Hotel, Pittsburgh, and was attended by a large number of the directors. One of the most important matters disposed of was the election of R. D. T. Hollowell, formerly commercial agent for the Carolina, Clinchfield and Ohio Railroad as secretary and treasurer. This position carries with it very important duties in connection with the establishment of a traffic bureau. Mr. Hollowell opened headquarters in Pittsburgh, April 7, in the Park Building, at the corner of 5th Ave. and Smithfield St.

The board of directors selected Hay Walker, of the Hay Walker Brick Company, Pittsburgh, and C. E. Foster, of the Kittanning Clay Products Co., Bradford, Pa., to fill vacancies left open at the annual meeting of the organization held at Chicago.

The full board of directors of the organization is composed of J. M. Adams, secretary and general manager of the Ironclay Brick Co., Columbus; H. R. Beegle, secretary and treasurer of the Beaver Clay Manufacturing Co., New Galilee, Pa.; J. H. Black, general manager of the Jewettville Brick Co., Buffalo, N. Y.; F. W. Butterworth, general manager of the Western Brick Co., Danville, Ill.; E. C. Clark, sales manager of the Kittanning Brick & Fire Clay Co., Pittsburgh; J. Parker B. Fiske, vice-president Fiske & Co., New York City; H. W. Holmes, General Manager of the Puritan Brick Co., Detroit; L. G. Kilbourne, president of the Columbus Brick and Terra Cotta Co., Columbus; J. W. Moulding, vice-president of the Thomas Moulding Co., Chicago; C. A. Phillips, sales manager of the Twin City Brick Co., St. Paul; W. D. Richardson, superintendent of the Ohio Mining & Manufacturing Co., Shawnee, Ohio; J. W. Sibley, president and general manager of the Sibley-Menge Brick and Coal Co., Birmingham, Ala.; W. J. Snyder, secretary and treasurer of the Brazil Clay Co., Brazil, Ind.; Hay Walker, of the Hay Walker Brick Co., Pittsburgh; C. E. Foster, of the Kittanning Clay Products Co., Bradford, Pa., and R. D. T. Hollowell, Cincinnati, secretary and treasurer.

The enthusiasm shown at the meeting attests to the interest being taken in the affairs of the organization. An active campaign is to be started for rate concessions from transportation companies for the shipment of face brick.

Considerable work is planned by the association this year. With this end in view all members are urged to pay the assessment made of one cent per thousand on all face brick manufactured by the association members during the term of 1912. It has been arranged that these checks shall not be made known to any member of the association. Only the secretary-treasurer will know how many brick the different members made during the term.

It is also planned that the Association shall establish and maintain a cost system for the benefit of the face brick manufacturers. By such a system, the manufacturers will not be in a position to "undersell one another," as one member put it. It is admitted that a standard cost system has been needed by the face brick manufacturers just as much as a cost system in a printing shop or a steel mill is required.

The making of Pittsburgh the headquarters of the association is looked upon as a logical move, as it places the office of the secretary-treasurer in the midst of one of the greatest clay manufacturing centers in the country.

Fire Brick Facts For Kiln Builders

Do not overlook the quality of Fire Brick used in inner walls, crowns and fire arches of your kilns; this is all important. When fire brick begin to give away the whole kiln is impaired.

No brick construction will stand under strain of gradual contraction account of poor quality fire brick.

Consult us in advance of placing your orders.

Davis Fire Brick Co. Oak Hill, O.**BRICK MAKERS**

Many of the largest users in your line, after costly competitive tests and experiments, are now specifying—

Evens & Howard Fire Brick

BECAUSE OF

QUALITY, PRICE AND SERVICE

We will be pleased to furnish complete information and quote prices on request.

**EVENS & HOWARD FIRE BRICK COMPANY
SAINT LOUIS**

Established 1856

HENRY MAURER & SON

Manufacturers of

High Grade Fire Brick

Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

Office: 420 East 23rd St. New York, N. Y.

Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building

Hollow Block

L. G. Leace, of Girard, O., has invented a new hollow tile block, which is being manufactured by the Greer-Beatty Clay Co., of Magnolia, O. One of the features of the block is that by laying the first block with the depression down and the next with the depression up, and breaking joints on top in the usual way, a continuous air space is provided from the bottom to the top of the wall. The arch in the block removes the pressure from the center of the block and puts the load on the outside wall, therefore, making a stronger wall. This block is intended for walls that can be built with an 8-inch block and is especially adapted to partitions in apartment houses, school houses and all buildings where sound is to be eliminated, at the same time shutting out the cold in winter and the heat in summer. It reduces the cost of heating to a minimum. The arches in the block are not placed opposite to each other, but one above the other so that they will not interfere with the ventilation of the wall. Provision is made for gas and water pipes in the construction of the hollow tile block. These blocks are made in different sizes and are covered with steel lath, provision being made that the joints in the wall may be broken.

The Clay Product Co., of Chicago and Brazil, Ind., manufacturer of Denison tile, opened up its new plant in Brazil a few days ago. This concern is one of the largest makers of this patented interlocking tile and preparations are being made to convert several plants in the Central West which are in the Company's territory to Denison tile as an auxiliary supply to take care of the increased demand for these blocks.

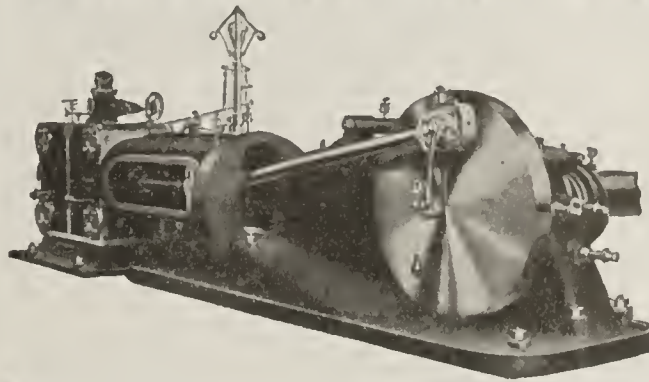
The March number of "Building Progress," published by the National Fire Proofing Co., has a very interesting article on the "Evolution of Fireproof Grain Elevators With Circular Tile Storage Bins." Little attention has been paid to fire prevention in building elevators until now and the construction done on the Canadian Northern Elevator at Fort William, Ontario, should open up a new field for hollow block.

Silos lend themselves admirably to hollow block and the numerous inquiries recently received by this journal indicate an awakening interest in the subject. A special pamphlet on the subject is to be issued by "Brick and Clay Record" at no distant date and data is being collected for the same now. Our readers may be able to help us in the compilation of this book by sending in practical suggestions. Actual working plans are solicited, as well as photographs of silos already constructed. Proper credit will be given all contributors.

Mr. Cronquist, the Swedish representative who is in this country studying American methods of clay product manufacture, read a very interesting paper at the recent Chicago convention. It is published elsewhere in this issue, and particular attention is called to his reference to the new closed-end hollow block that was invented by a German.

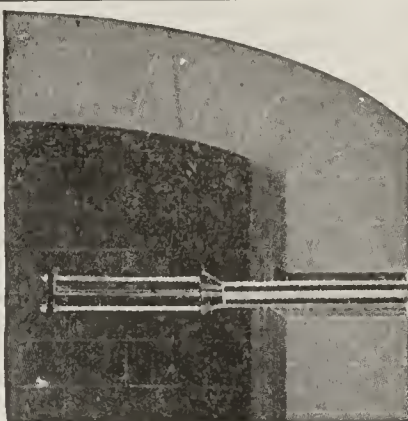
(EDITOR'S NOTE—We earnestly solicit news items for this newly created department and ask our readers, interested in hollow tile, to assist us in making this an interesting feature each issue and send in suggestions.)

POWER PLANTS COMPLETE CORLISS ENGINES, WATER-TUBE AND TUBULAR BOILERS



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PYROMETERS

Stationary, portable and
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1200
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Nortmann-Duffke Foundry Co.
Manufacturers of
Perforated Metals and Crucible
Steel Castings of All Kinds
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PERFORATED METAL SCREENS

As required for
**BRICK
MAKERS
USES.**



Manufactured
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THE RICHARDSON-LOVEJOY ENGINEERING COMPANY

COLUMBUS, OHIO

CERAMIC ENGINEERS
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GEOLOGICAL EXAMINATION OF PROPERTIES
CLAY TESTING

INVESTIGATIONS OF MANUFACTURING PROPOSITIONS
PLANTS DESIGNED, CONSTRUCTION SUPERINTENDED
AND OPERATIONS DIRECTED
DRIERS, FURNACES, KILNS

REMODELING OLD PLANTS GIVEN SPECIAL ATTENTION
DEVELOPMENT OF NEW LINES OF PRODUCTS

Pamphlet, "Ceramic Engineering." Free

Absolute Control of Temperatures in all Kinds of Kilns and Furnaces

Heraeus Le Chatelier

PYROMETER

Recommended by the highest authorities

For measuring temperature between 0 and 1800 deg. Celsius, equal to 2920 deg. Fahrenheit. Successfully used in establishments for the manufacture of Brick, Pressed Brick, Terra Cotta, Pottery, Porcelain, Stoneware, Chamotte, Cement, Glass, Iron and Steel and other metals, particularly for Hardening and Annealing, also for Molten Metals, Cartridges and Ammunition, Chemicals, Gas, Accumulators; and by Boiler Inspectors, Schools and Colleges.

Heraeus Patented Electrical Furnaces

For Laboratory and Experimental Use.

Fused Silica Ware of Every Description at Moderate Prices

Heraeus Patented Fused Quartz Glass Articles

of every description. This Heraeus Patented Fused Quartz Glass is not affected by any changes of temperature, whatever, and the coefficient of expansion is only 1-17 that of platinum. It is of the utmost importance for all purposes where the above qualities are essential. Write for information. Pamphlets and References on Application

CHARLES ENGELHARD, Hudson Terminal Bldg.
30 Cortland St., NEW YORK CITY

HOW TO ANALYZE CLAY

A Practical Work
for Practical Men

An aid to beginners and full instructions
for making clay analysis

64 Pages with Illustrations
By HOLDEM M. ASHBY

PRICE
\$1.00
POSTPAID

"BRICK AND CLAY RECORD"
445 PLYMOUTH COURT, CHICAGO

Fire Brick

The Harbison-Walker Refractories Co., of Pittsburgh, plans the construction of a new plant in the vicinity of Strasburg, O. The Pennsylvania Railroad Co. has started the construction of a long spur from the main line of the Pan Handle road to take care of the business this plant will produce, and also that from the new plant of the Dover Fire Brick Co. These two new plants in the New Philadelphia and Canal Dover, O., district are expected to be completed and in operation within the next four months.

The general offices of the Freeman Fire Brick Co. have been moved from Steubenville, O., to New Cumberland, W. Va. Al Freeman, who is general manager of this plant, is Director of Public Safety in Steubenville.

The West Virginia Fire Clay & Manufacturing Co., of New Cumberland, W. Va., with general offices in the Diamond National Building, Pittsburgh, Pa., under the management of N. W. Ballantyne, secured an order for one thousand barrels of fire clay to be shipped to the Panama Canal. All of the clay is inspected by an employee of the Federal Government before it is shipped. The clay is loaded at the mines at New Cumberland, and sent to Pier No. 65 New York, where it is loaded on boat. This company, so it is reported, has shipped nearly 50,000 barrels of West Virginia fire clay to the contractors on the Canal.

An important addition to the clay-working industry of Kentucky, backed by a Louisville concern, is the branch plant of the Louisville Fire Brick Works at Grahm, Carter county, Ky. These yards will open for business at the earliest possible date in the spring. For weeks past the work of establishing a modern fire brick plant with a capacity of upwards of 50,000 brick per day has been under way at valuable fire clay deposits owned by the Gateway City concern in Carter county. The branch of the Louisville Fire Brick Works will enable the concern to handle its constantly increasing business in fire brick, back-walls and furnace-linings, and it is said it will be one of the best equipped plants of its kind in that section of the country.

The question of lining incinerators for pulp mills is one of some little complexity as the lining must withstand not only the high temperature and the wear and abrasion due to the revolving kiln, but also must be of exceptional density so that it will not be affected by the black liquor going through the kiln. In a recent machine furnished for this purpose for which a special fire clay block was designed by the Harbison-Walker Refractories Co., the highest grade of clays were used in order to render the block unusually refractory. Although a lower grade of clay could withstand the heat of the incinerator without melting on the surface, it has been found that the life of the lining is very much increased by the use of the highest grade clays obtainable. These have to be carefully selected, and ground and burned with the greatest care.

According to reports from Ione, Cal., where one plant is now turning out first-class fire brick and fire clay, several San Francisco parties have recently been looking over the ground in that vicinity with a view to additional development.

With the Potter

The report is once more current that the potteries in the upper Ohio Valley are in need of workmen. The many additions being made to the general ware potteries in that vicinity, with the building of two 15-kiln potteries in Newell, W. Va., will open up hundreds of new positions, and workers must be procured from some source. The situation is attracting considerable attention, for by the middle of summer a number of new and important clay shops will be put on the active list.

Pittsburgh capital is said to be interested in the consolidation of three of the largest stoneware potteries at Crookville, O. The plants of the Burley & Winter Co., John G. Burley pottery and the Keystone Stoneware Pottery Co. have been merged, and are now being operated under one management. The capital stock of the new company is \$250,000. This consolidation is said to be independent of the plan of Pittsburgh and other interests to consolidate a number of local stoneware plants, for economy of operation.

Sixty girls employed in the electric porcelain plant, owned by the General Electric Porcelain Co., which concern also controls several Trenton, N. J., plants, struck for an advance in wages and after being out for a day their demands were granted. The old scale called for \$1, \$1.25 and \$1.50 a day, and the girls were given an increase of ten cents per diem. The strikers remained "out" a day, and then returned to their benches.

The first sanitary pottery in East Liverpool, O., started operations March 1, under the management of W. J. Mays, formerly identified with the management of the Riverside Pottery at Wheeling, W. Va. This new company was formed through the efforts of the East Liverpool Chamber of Commerce. The idle plant of the Ohio Porcelain Co. was purchased, and after a number of changes were made to the machinery, the making of sanitary ware was begun. The officers of the new company are: President, Thomas V. Milligan; secretary, Charles Brown, and treasurer, C. V. Beatty. The plant has a capacity of three kilns, and additional kilns will be built this fall.

Financial interests which expect to be identified with the purchase of a number of stoneware potteries in the Zanesville and Crookville district held a meeting in Pittsburgh, Pa., to go into details concerning the proposition. Those who have been active in the preliminary arrangements, refuse to make any statement concerning the progress of plans, preferring to allow the financial interests to work out their plant first.

As was announced in this journal several months ago, the West End Pottery Co., at East Liverpool, O., will soon increase the capacity of its plant. Plans have been completed for the construction of two additional kilns, which will give the firm a battery of seven kilns. Increases in other departments will be made accordingly.

After some delay in construction, all work has been completed, and the plant of the Delhi Pottery Co., at Quakerstown, Pa., near Philadelphia, has been placed in operation. A varied line of pottery products will be manufactured.

The "Martin"

BRICK MACHINERY






Modern YARD SUPPLIES






Soft-Mud or Stiff-Mud Processes

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Barrows and Trucks

Disintegrators

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The Henry Martin Brick Machine Mfg. Co.

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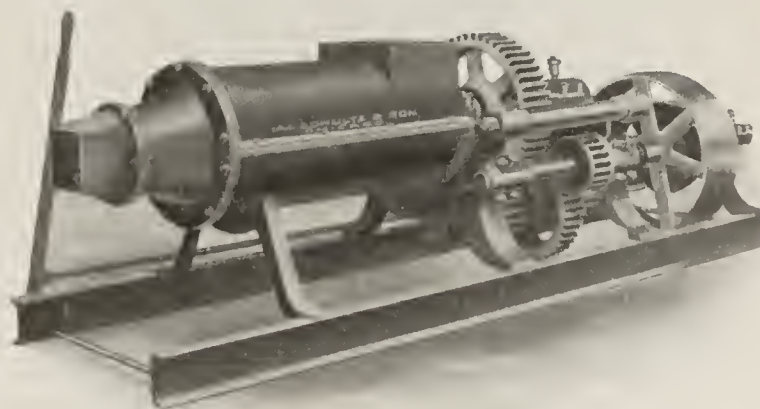
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For Brick, Tile and Terra Cotta Plants

We make a specialty of designing and furnishing complete machinery equipment for all kinds of clay-working plants, including expert engineering service in supervising erection and installation.



Double Pug Mill equipment, especially designed for the perfect preparation of material in the manufacture of terra cotta.

SCHULTZ HEAVY DUTY FRICTION CLUTCH

suitable for all purposes. If you are having clutch trouble, write to us and we will show you the way out of your difficulties.

Complete brick plants furnished promptly, including auger machines, pug mills, clay cars and granulator shafts.

Cutting and cut steel gears always in stock for brick machines, also granulator knives.

Remember, we are brick works engineers and will be glad to advise you regarding any improvements or repairs which you contemplate.

A. L. SCHULTZ & SON, 1675 Elston Ave., Chicago

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We also make a complete line of Power Transmission Appliances, Engines and Boilers.

Increase Your Profits Through Greater Efficiency



The Martinsburg Brick Wagon

You can triple the delivery capacity of your teams on short hauls and largely increase it on longer ones. *W.E. B. W.*

Raleigh, N. C., March 15th, 1913.

"We are sending you photos of one of our Twentieth Century dump wagons showing the delivery of a load of brick into the basement for foundation work on the addition to the Federal Court and Post Office building. You can see from the picture that the driver can drive close to the edge of the excavation and can place the rear end of the wagon without backing up, so that when the load is dumped the brick will slide gently down a chute, delivering the brick into a fifteen foot excavation, thus saving time and handling for us and the contractor."

"We find that with two wagons we are able to deliver from cars to jobs which are not over a mile haul, as many brick as with three wagons where the driver has to handle the brick to unload. We trust that this picture is satisfactory."

Very truly,

JOHNSON & JOHNSON CO.,
(Signed) B. D. Johnson.

You can dump **Face Brick** without damage.

Auburn Wagon Co. Race and Auburn Sts.,
Martinsburg, W. Va.

Terra Cotta

The quarterly meeting of the National Terra Cotta Society was held March 13th to 15th, at the Planters' Hotel, St. Louis, Mo., with forty delegates present.

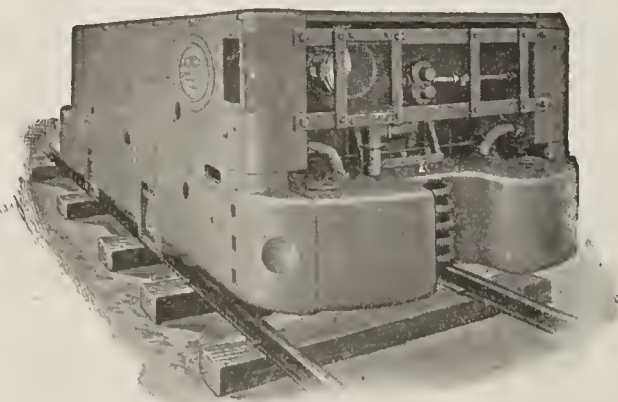
The sessions proved to be of unusual interest and profit and it was a matter of general congratulation among the members that the returns for the past year show terra cotta is coming more into universal use than ever before in the United States. "Its introduction in America means a revival of the decorative arts of olden times," officers of the society declared. It was shown that more than \$12,000,000 was spent for architectural terra cotta for external decorations in this country in 1912, more than double the amount which was spent during the year 1910.

F. Wagner, of Chicago, is president of the society, Walter Geer, of New York, first vice president; W. E. Denison, of San Francisco, second vice president; W. D. Gates, of Chicago, secretary, and E. V. Eskesen, of New York, treasurer.

A banquet was given on Thursday evening. On Friday morning papers were read as follows: "Study of Cost," by H. J. Lucas, of New York; "Uniform System of Cost Finding," by F. C. Townsend; "The Philosophy of Costs," by J. X. Moore, and "Profitable Increase of Manufacturing Costs," by F. E. Ellersdorfer.

"Terra cotta is not imitation stone and should not be treated as such. Its distinctive peculiarities should be carefully considered and made the most of."

Gasoline Haulage Motors



UNDERGROUND TYPE.

Over 30 different companies using these motors for their main haulage.

Write for Bulletins.

GEO. D. WHITCOMB CO.
Rochelle, Illinois



Terra Cotta, in Dark Buff, Adds Decorative Feature to Entrance of Balboa Bldg., San Francisco.

Encaustic Tile

"One of the distinguishing features of English architecture is the extensive use of tiling or ceramic mosaics, not only as a covering for floors and walls in many parts of the building, but as an exterior decoration as well," says the "Improvement Bulletin," which further states: "In passing through the streets of London or other English cities, one frequently sees cafes, theaters, restaurants, tea rooms or other places of refreshment or recreation decorated on the exterior with bright colored, gay and elaborate glazed tile. Butcher shops, dairies, fishmongers and pharmacies with tiled floors, walls, display counters, and even tiled facades are a common sight; and the attractive, substantial, cleanly and sanitary appearance of these shops is most refreshing to the eye.

"In the English hotel, tiling is everywhere in evidence on the floors and walls of vestibule, corridor, lobby, waiting room, smoking room and dining room; not to mention the bath room, toilets, kitchen, butler's pantry, laundry and engine room, which in England are almost always furnished with sanitary non-absorbent, washable tiled floors and walls. Church aisles, railroad station floors and the floors and walls of vestibules, corridors and halls of public buildings are nearly always covered with tiles or ceramic mosaic work. Some of the most elaborate religious pictures on the altars are worked out in beautiful ceramic mosaics.

"The English hospital is almost invariably tiled, and usually advantage is taken of the decorative possibilities of tile work in order to relieve the monotonous monochrome appearance of the white tiled walls. In the children's ward, for instance, the walls are nearly always covered with pictures in tile work, which are a source of much delight to the little patients.

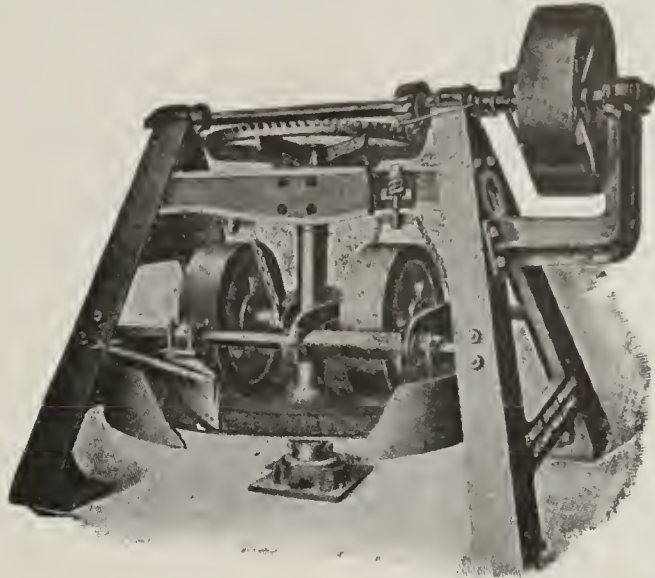
"The large public baths seen in even the poorest quarters of London are usually tiled throughout, which is a great help in keeping them in a clean, sanitary condition, in spite of their frequent use by many of the poorest specimens of English humanity. One of the strangest places in which to find an extensive use of tiles on floors and walls is the police station. Yet, there are in London, police stations, the interiors of which are almost completely covered with most artistically decorated tile and ceramic mosaic work.

"The English are a practicable people, and they give far more thought to the probable duration of their buildings than to the rapidity of their construction. They recognize that the floors and walls are the most abused parts of the building, and consequently the first parts that are likely to show wear or decay, and so they usually cover them with a hard, inorganic, non-porous, fireproof, washable material such as the baked clay tile."

"In recent years," says a writer in "The House Beautiful," "the old-fashioned pavement has come into great favor, particularly the large, dark red squares known as Welch tiles. As to its beauty, that depends on the selection of the tiles. Decorated ones are risky, and, except for the famous examples such as the Persians or the Moors once made, there is greater beauty in good plain colors that contrast, not harmonize, with the walls."

Wisconsin employers who do not operate under the workmen's compensation act have been notified by liability insurance companies of a big increase in rates.

The "Eagle" Dry Pan



With independent and suspended mullers,
has more

Distinctive Points of Merit

than any other Pan on the market.

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EAGLE IRON WORKS, Builders
DES MOINES, IOWA

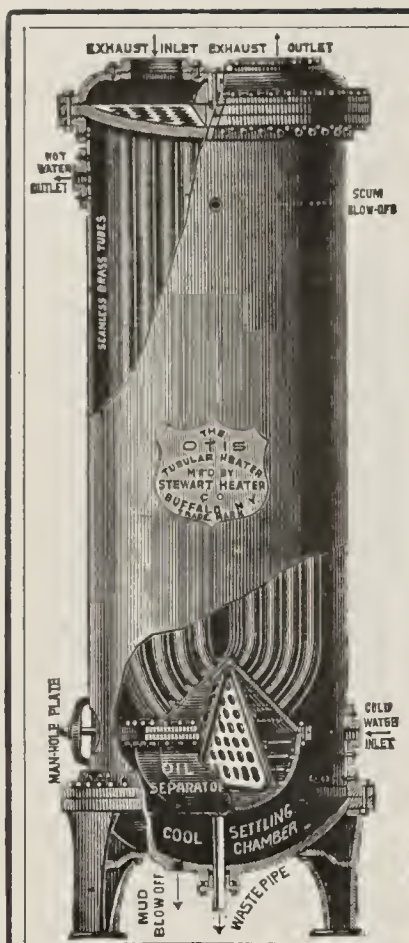


Chase Improved Flexible Bearing Folding Deck Dryer Car

See this car before placing your order.

We also manufacture a full line of Side Dump, Bottom Dump and General Purpose Cars, Transfer Cars, Turntables, Switches, etc.

The Chase Foundry & Mfg. Co., Columbus, O.



THE OTIS

Tubular Feed Water Heater, Oil Separator and Purifier

is not an experiment but a tried and trusted appliance that the makers are not afraid to

GUARANTEE

To heat the feed water to the *boiling point* (210 to 212 degrees) with the exhaust steam without causing any back pressure, also to *extract the oil from the exhaust*, so that the exhaust steam after being passed through the heater can be used for other heating purposes, and the water of condensation for the heating system be returned to the boiler without the *additional expense* of an *eliminator*.

We are so sure of the OTIS that we agree to pay all cost of a trial—freight, cartage, piping, etc.—if it fails to do all we claim for it.

Catalogue and Prices at Your Service

The Stewart Heater Company,

33 EAST DELEVAN AVENUE - BUFFALO, N. Y.

Machines and Equipment

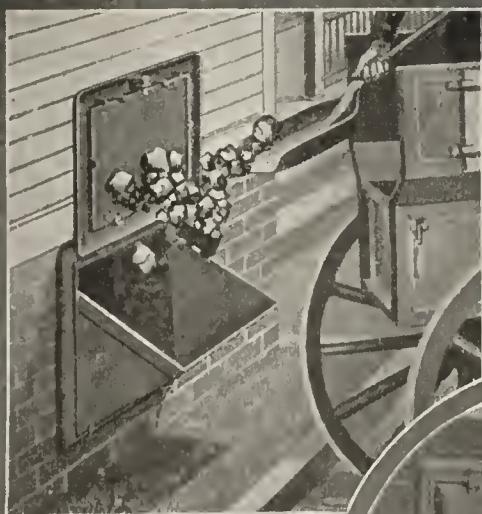
The Majestic Coal Chute, designed by J. M. Triggs, Gen. Mgr. of the Majestic Furnace & Foundry Co., Huntington, Ind., its manufacturers, is well adapted for use in connection with brick construction. Placed in the foundation wall, it affords protection to the building, saving it from damage and defacement by careless coal deliv-



A Majestic Coal Chute Protects the Building.

ers. The cover, as shown in the illustration, locking automatically over the opening, affords protection just where it is needed. As the coal strikes the door it falls into the hopper and passes on into the basement without being scattered over the lawn. These coal chutes are being handled in large quantities by two of "Brick and Clay Record's" subscribers, Fowler & Pay, Mankato, Minn., and Sunderland Bros., of Omaha. It is a line which could be handled advantageously by any brick maker or dealer.

MAJESTIC FOUNDATION COAL CHUTE



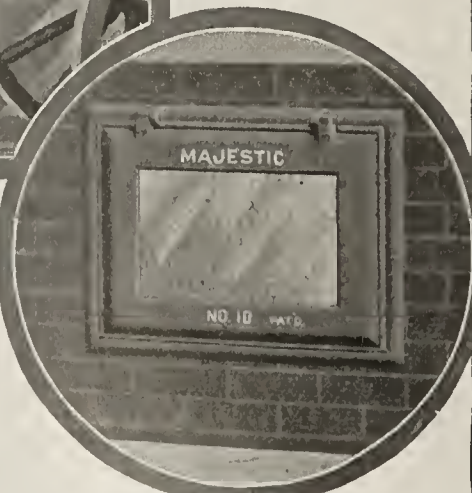
Protects the building just where most needed—above the opening.

The heavy steel hopper catches all the coal.

When not in use, the hopper lies in the bottom of the chute body. The door locks automatically either open or closed. Strictly burglar-proof. With 1/4-inch wire glass or steel panel in door.

Write for circular and address of nearest dealer.

MAJESTIC FURNACE CO.
Huntington, Indiana



H. O. Steele of the firm of Steele & Sons, Statesville, N. C.

J. C. Steele & Sons, Statesville, N. C., in a letter recently written us, state: "We were unable to get to the Chicago conventions and Clay Show on account of press of business. Customers were clamoring so for shipments, we felt bound to give them first consideration."

New Plants and Additions

Pullman, Washington, is advertising for the establishing of a brick plant in that city. It is claimed that \$500,000 will be expended in the construction of brick building there this summer, and that a plant would be able to make good there.

The French Brick & Tile Co., Trenton, N. J., has been incorporated with a capital of \$150,000, to manufacture brick, tile, etc. The incorporators are: C. T. King; J. M. King, Daniels, Ill., and H. J. Bryce, Trenton.

The Dayton Pottery Co., at Dayton, Ky., has been incorporated with a capitalization of \$3,000. The incorporators are: Barney Forstner, T. M. Cope and Walter Berteman.

The White Fireproof Construction Co. has been incorporated at East Orange, N. Y., with a capital of \$100,000, to manufacture fireproofing materials.

The Toronto Clay Products Co. has been incorporated to build a new tile plant at Little Falls, Wash. The concern is capitalized for \$100,000 and the incorporators are J. A. Venice, of Winlock, et al.

The Chehalis Brick & Tile Co., of Chehalis, Wash., is expending about \$12,000 on improvements to its plant. Among the additions are a Klose continuous kiln, which will have a capacity of 20,000 brick per day, and a Standard four-track dry kiln.

It is reported that a reorganization of the Crucial Brick Co., of Rome, Ga., will take place, the purpose being to purchase the plant which is to be sold, as property of Captain Bass et al, bankrupts. No bids will be received for less than \$25,000. The property is said to be worth approximately \$100,000.

The Salisbury Brick & Tile Co., Salisbury, N. C., purchased twenty acres of land and will establish a plant with a daily capacity of 25,000 brick.

J. L. Pinson has purchased the J. T. Nichols brick yard near New Market, S. C., and has assumed charge of the plant. New machinery will be installed and a switch put in for loading cars for shipment.

The Zanesville (Ohio) Pottery Co. will spend between \$15,000 and \$20,000 to make improvements and additions to its plant.

The New Castle Brick & Clay Co., is the name of the latest brick manufacturing company to be formed at New Castle, Pa. An application for a charter was filed at Harrisburg, Pa., March 17. The incorporators are given as Edward R. and Walter B. Sheaffer and Edward R. Beegle. The company will have its headquarters in New Castle.

The Bell Tile Works, is the name of a new clay manufacturing company which will start business at Gettysburg, Pa. The incorporators are John W. Hewett, of Aspers, Pa.; Edgar R. Crouse, Gettysburg, Pa., and Harry Lower, of Table Rock, Pa.

It is said that by April 20, the remodeled plant of the Royaltan Shale Brick Co., at Middletown, Pa., will be ready for operation. The company is now under the management of B. Dawson Coleman and the plant will have a capacity of 25,000 paving blocks per diem. All machinery has been installed with this end in view.

The West End Pottery Co., at East Liverpool, Ohio, intends building two additional kilns and will also increase its packing department.

The Penn Vitriified Brick Works, located near Cameron, Pa., was sold recently by Attorney Charles C. Stroth, as master, under bond of the United States Court, to the bond holders, who bid in the property for \$12,000. It is likely that the plant will be placed in operation at an early date.

The Homestead Brickyards, at Bergen Township, N. J., has been incorporated with a capital of \$125,000, to manufacture brick. The incorporators are: C. F. Stone, Jr., C. Steadman and J. K. Porter Stone.

The Keystone Brick Co., at Watsontown, Pa., has been incorporated with a capital of \$10,000.

The Hayes Pottery Co., at Wilmington, Del., has been

To Prevent Scum Appearing on Your
Brick, Terra Cotta, Etc., Use

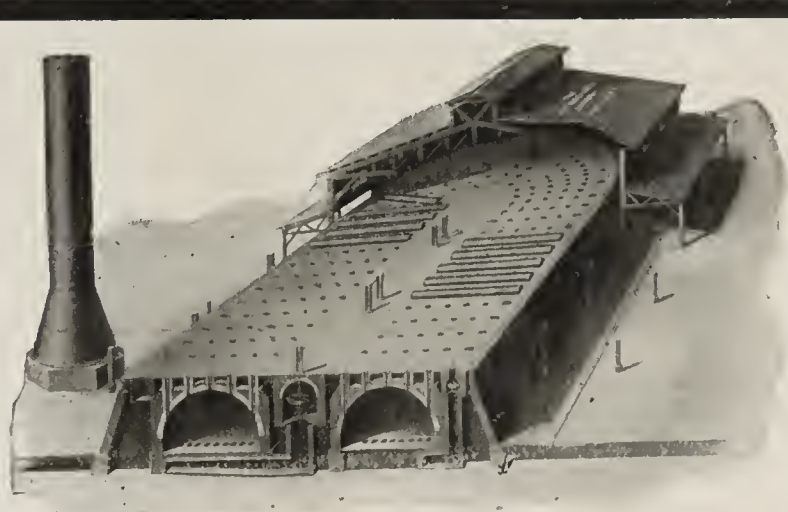
R. H. Precipitated Carbonate of Barytes

Literature on Application

Other High Grade Chemicals For
Clay Industries

The Roessler & Hasslacher Chemical Company

100 Williams Street, New York



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FOR

CLAY PRODUCTS

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Write Us for list and discount on

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The best belting made for Conveyors and Driving. We sell Rubber Belting, Packing, Hose and everything else in the rubber line.

We are the sole distributors of "Sawyers" in Chicago. What do you wish prices on?

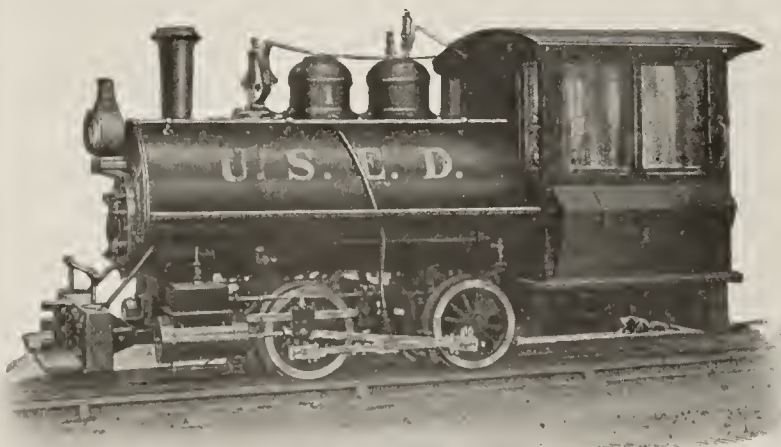
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CLAY HAULAGE

Reduce costs of transportation by using a

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Small Size—Reasonable Cost—Especially built for use of clay-products manufacturers, for hauling clay or shale from pits or mines to plant.

Cheaper Than Horse Transportation

and will reduce costs of delivering your material to your plant, thus increasing profits.

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Write us for particulars

Davenport Locomotive Works

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BRANCH OFFICES: St. Louis: 654 Pierce Bldg.
Chicago: 12 and 14 So. Canal St. St. Paul: 1308 Pioneer-Press Bldg.
Seattle: 617 Western Ave. New York City: 30 Church St.
Canadian Representative: F. H. Hopkins & Co., Montreal, Que.

incorporated with a capital of \$150,000, to manufacture terra cotta and other kindred products.

Brick and tile will be made by the Long Vitrified Brick Co., which has just been formed at North Judson, Ind., with a capital stock of \$65,000. Glenn D. Peters and John W. Long are at the head of the new company.

With a capital stock of \$20,000 the Bradner Brick & Tile Co. has been formed at Bradner, O., by George A. Flanders, Daniel Stahl and F. A. Silverwood.

According to report, the South Webster Brick Co., of Portsmouth, O., will soon double the capacity of its plant. This will necessitate the installing of considerable additional machinery.

A. Duty, one of the oldest brick manufacturers in Ohio, who built and operated a plant continuously for 32 years, has retired from active business, and has sold his plant to C. G. Barkwill, of the Barkwill Brick Co., of Cleveland, O. The Barkwill Company will continue to operate the Duty plant, which makes four plants which the company owns and operates in the vicinity of Cleveland.

Clay from the farm of J. W. Booher, near Lisbon, O., is being tested to ascertain its adaptability to brick manufacturing purposes. The farm is composed of 211 acres, and is owned by East Liverpool men.

Martin E. Kingler, has formed the Hoosier Brick & Tile Co., of Moore, O., with a capital stock of \$10,000. Drain tile will be made a feature in the products of this company, although building brick will also be manufactured.

E. G. Krebs is preparing to install a tile plant at Tillamook, Ore.

The Van Daver Clay Products Co., at Houston, Texas, has been incorporated with a capital of \$30,000. The incorporators are: H. C. Van Daver, Jennings Van Daver and A. P. Green.

In the Toronto (O.) district, plans for the rebuilding of the Little Giant brick works, which was destroyed by fire a few weeks ago, are well under way. This plant is owned and operated by the Toronto Brick & Fire Clay Co., of which Paul McFadden, secretary of the Building Brick Association, is secretary and treasurer. Mr. McFadden has advised us that the plant will be built with a larger capacity, and placed in operation as soon as possible.

A deal has been about closed at Martinsburg, W. Va., which will insure the erection of a new paving brick plant by the National Quarry Co. It is planned to erect a plant with a capacity of 100,000 paving bricks daily. Arrangements are now being made with the Baltimore & Ohio Railroad Co., for the use of a switch to the site of the new plant.

The Scranton Brick & Tile Co. is being organized at Scranton, N. D., for the purpose of establishing a brick plant. The company is to be incorporated with a capital of \$100,000, \$10,000 of which is to be furnished by local capital, the remainder to be furnished by outside investors. The plant's capacity will be 50,000 brick daily.

The Nazareth (Pa.) Brick Works has been sold to Groman Bros., of South Bethlehem, Pa. The property consists of eighteen acres, the plant buildings and three kilns. The new owners intend to place the plant in operation as soon as possible.

The Sanitee River Brick Co. has been commissioned with a capital of \$15,000, at St. Stephens, S. C. The incorporators are: W. R. Funk, C. E. Funk and S. W. Locklear.

The plant of the McAlester (Okla.) Brick Co. was badly damaged by a recent fire. Considerable rebuilding will be necessary to restore the plant to its former condition.

The Moellering Brick Co., of Ft. Wayne, Ind., has been incorporated with a capital of \$25,000 to take over the William Moellering brick plant near Ft. Wayne. Improved machinery will be installed and the output increased to 5,000,000 brick annually. The incorporators are: W. F. Moellering, H. F. Moellering, C. E. Moellering, E. H. Moellering and H. A. Gerberding.

The Albany Clay Products Co., of Rensselaer, N. Y., is planning to erect a plant on its property at Upper Rensselaer, N. Y.

Gordon Swick, Rosenberg, Texas, is interested in the promotion of a company for the purpose of establishing a brick plant, the capacity to be 60,000 to 80,000 brick per day.

The Independent Gravel Co., of Joplin, Mo., is reported to be planning the establishment of a brick and tile plant at Webb City, Mo.

The Globe Porcelain Co., at Trenton, N. J., has been incorporated with a capital of \$100,000. Joseph Steinert, of Trenton, is the head of the new enterprise.

The Bell Tile Works is the title of a new corporation which will manufacture clay products at Gettysburg, Pa. The incorporators are: J. W. Hewett, Aspers, Pa.; Edgar R. Crouse, Gettysburg, Pa., and Harry Lower, of Table Rock, Pa.

J. A. Walker, of Chico, Cal., is contemplating the establishment of a sand-lime brick plant at that place.

A brick plant will be established at Lethbridge, Can., by Messrs. Albert and Jesse Knowlden. The plant will be run by electricity and the output will be between two and three million a year.

A brick yard will be established at Carman, Man. The plant will cost in the neighborhood of \$100,000. The raw material will be shipped from Leary, a nearby town where the company's clay beds are situated.

A portion of the plant of the Crown pottery at Evansville, Ind., was destroyed by fire March 24th, entailing a loss of from \$50,000 to \$60,000. The buildings will be rebuilt at once. A. M. Well is the president of the company and H. W. Flentke, general manager.

The Maryland Slate Brick & Tile Co. has been incorporated with a capital of \$100,000 by W. H. Fisher, H. M. Conger and A. W. Folke, Washington, D. C.

A tract of 52 acres of land near Lees Summit, Mo., has been purchased by the Bryant Investment Co., which company will erect a large brick and tile plant.

The Chase Brick & Tile Corporation has been formed at Broadnax, Va., with a capital of \$10,000. F. N. Mallory, of Lawrenceville, Va., is president; D. B. Pennington, of Broadnax, secretary and treasurer, and C. B. Chase, of Lawrenceville, Va., general manager.

The New Brunswick Coal, Iron & Clay Co. has been incorporated with a capital of \$275,000, to develop coal, iron and clay deposits and carry on business incidental thereto.

It is reported that two tile plants will soon be installed at Little Falls, Wash., one by the Standard Clay Co. and another by a number of residents of surrounding towns.

At Richmond, Va., the Ready Brick Yards Co., has been formed by W. J. Ready, who is the president of the new company, which has a capital stock of \$75,000. The vice-president is Irvin Bain and A. A. Saunders is secretary and treasurer.

After a brief suspension of operations, during which time needed repairs were made to their property, the Claymont Brick Works, at New Cumberland, W. Va., has resumed operation in full.

A charter has been granted to the Pittsburgh Fire Brick Co., which has been formed with a capital stock of \$25,000. Those forming the company are J. S. Skelly, of Monongahela City, Pa., and I. W. Brison, of Aspinwall, Pa., both towns of which are suburbs of Pittsburgh. The company will make a specialty of fire brick and pavers, so it is reported here.

The Bradner Brick & Tile Co., at Bradner, Ohio, has been incorporated with a capital of \$200,000, to make all kinds of clay products. The incorporators are, F. A. Silverwood, G. A. Flanders, Daniel Stahl, J. W. Stiger, F. C. Hoxworth and C. H. Kootier.

All arrangements have been completed for the starting of construction work on a new brick plant at New Hope, Pa., by the New Hope Shale Brick Co., which will cost in the neighborhood of \$200,000. The plant will be the largest of its character in that section of the state.

NEWS OF THE CLAY WORLD.

The hoisting engineers won their fight against the brick manufacturers of Cook County, Illinois, to have the contract for the Conway and Continental Bank Building, Chicago, taken away from the Curtis Brick Co. The

Selecting Your Belt



YOU cannot judge a belt by its appearance. You must know what it will do in actual service. Probably no severer test could exemplify the strength and stability of

THE GANDY BELT

more effectively than is shown in the illustration above. Here GANDY BELTS drive cement mills through air laden with particles of dust, grit and stone, and still they do not harden or slip. Any belt which will succeed in such extreme service as this is your safest belt investment

For The Brick Field

but in addition the GANDY BELT costs only one-third as much as leather and much less than rubber belting.

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ONE REASON WHY
“NESTOR”
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Brick and Clay Working Machinery

The severe conditions imposed upon machinery in the Brick and Clay Working Industry demand that gears be specially designed and cut from material that will give

Long Life
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A thorough study has been made of the operating conditions to be met in the Brick and Clay Working Industry—and a correct gear to meet your most severe requirements can be supplied.

Let us know your requirements

Nuttall : Pittsburgh

The largest gear works in the world

Thompson, Starrett Construction Co., which ordered 7,000,000 brick for the two structures, agreed to cancel the contract if the engineers would return to work on the Conway building. The Thompson-Starrett Co. has secured an option on all the second-hand brick in the city, about the amount needed for the two buildings. Some delay in the settlement was occasioned by the difficulty in obtaining 300,000 hollow block needed for the court of the Conway building. About 800 workmen were thrown out of work on account of the strike of three engineers.

The Hoosier Brick Co., New Albany, Ind., has resumed operation at its plant, after a temporary shut-down for repairs and improvements. A new kiln of 500,000 capacity is among the additions.

A brick plant is one of the latest acquisition of Rock Springs, Wyo.

The McArthur Brick Co., of McArthur, Ohio, is said to be experimenting with zinc sulphide for coloring brick.

The reported shortage in the amount of lumber cut for the season in New England and the consequent advance of ten per cent to all dealers is regarded as propitious by the Eastern brickmakers, as the number of contracts already let for 1913 is much greater than for the same period last year.

The Boyd Brick & Tile Co., Knob Noster Mo., has made many improvements to its plant, including the installment of a modern 300-h. p. Hamilton-Corliss engine. The company is doing a big business and has orders booked for nearly half a million brick. A new 200,000 capacity kiln is in course of construction and the company is planning the installment of additional brick machinery during the year.

The brick plant at Liberal, Mo., under the management of Sam Mellor, who has leased it for five years, has resumed operations. The plant has been shut down for six months.

The Salina Vitriified Brick Co. Salina, Kansas, has resumed operations after a shut down, during which electric motors were installed to take the place of steam power. A small heating plant was also installed to furnish hot air for the dryers.

Nicholas Mehrhof, of Hackensack, N. J., president of the Hackensack River Brick Manufacturers' Association, died March 31, in his eighty-fourth year. Born in Germany in 1830, he came to this country in 1844 and as a boy secured work in the brickyards of William A. Underhill, at Croton Point. He became superintendent, and finally proprietor. He went to Hackensack in 1877, continuing the same business at Little Ferry, a suburb of Hackensack.

Arthur L. Smith, a well known brick manufacturer of Greenfield, Mass., died recently from diabetes and kidney trouble. For a considerable number of years he has been engaged in the manufacture of brick.

The National Brick Co., of Montreal, Can., has declared a dividend. A bonus of 1½ per cent for 1912, and a 5 per cent disbursement for 1913, has been decided upon by the board.

The concrete walls of the sanitary canal at Joliet, Ill., have been examined by the trustees and found to be in a crumbling condition.

"Brick and Clay Record's" Classified Ads have such a reputation for securing results that Ads are even sent in to that department by telegraph.

The new plant of the Salisbury Brick Mfg. Co., of Delmar, Del., has been placed in operation and is turning out about 30,000 brick per day. The clay is taken from the pit to the plant on electric tramway.

Action for the dissolution of the Sterling Brick Co., of Marietta, Ohio, has been taken by the stockholders of the company. Suit has been filed asking for a receiver to convert the company's property into cash to pay its indebtedness. It is set forth that the company is solvent and that the plant is idle and has an indebtedness of more than \$9,500.

The brick manufacturing trade throughout the country will be pleased to learn of the plans of the large contracting firm of James Stewart & Co., who have general

offices in New York, Pittsburgh and Chicago. This company has just re-incorporated with a capital stock of \$3,750,000 divided into \$1,000,000 seven per cent cumulative first preferred stock; \$1,500,000 seven per cent cumulative second preferred and participating and \$1,250,000 common stock. A. M. Stewart, is president; J. C. Stewart, vice president; Henry W. Lehmann, of St. Louis, second vice president and western manager; Charles F. Transom, third vice president and chief engineer; W. A. Rowan, treasurer, and J. B. A. Fosburgh, secretary. The manager of the Pittsburgh office is R. R. Kitchen.

At the annual meeting of the Portage Silica Co. and the Trumbull Brick Co., held at Warren, O., the following officers were elected for the ensuing year: President, J. G. Butler, Jr.; vice-president, J. B. Chambers; second vice-president, H. H. Hoffmaster, who is also assistant treasurer; secretary, E. E. Klooz and treasurer, H. Z. Kelly. These officers and H. A. Butler compose the Board of Directors.

The Hydraulic Brick Co., of St. Louis, Mo., and Cleveland, O., is developing such a large business in Ohio, that plans for the opening of an Ohio office have been completed. The company recently obtained a large contract to furnish brick for a new hospital which is to be erected in Cincinnati.

E. C. Carr, Jr., has assumed the position of manager of the Wooster Shale-Brick Co., of Wooster, O. He was formerly associated with the offices of the Metropolitan Brick Co., of Canton, O., and was a former resident of Coshocton, O.

Ira Goodrich, brickmaker for the Belden Brick Co., at Canton, O., was caught in the machinery of the crushing plant while changing plates, and injured so badly that he died shortly afterwards.

New styles in brick have arrived in Wichita, Kansas, according to the "Wichita Beacon." Thirty-five styles of face brick in as many colors have been utilized by the Kansas Buff Brick Co., in remodeling its display rooms in the Beacon Building. Plum-colored, blue, drab, gray black and mottled brown brick vie with the new colors seen in the latest millinery.

C. E. Baudisch, superintendent of the Gulf Coast Brick & Tile Co., Brownsville, Texas, says the brick business is good there, the only drawback being that they cannot make enough to supply the demand.

The Imperial Clay products Co., is the name of a new concern which will erect a large paving brick manufacturing plant, with a capacity of 40,000 per day, in the vicinity of Ridgeway, Pa. It is also possible that the company will manufacture building and face brick, with a capacity of 80,000 of these per diem.

The Adel Clay Products Co., Adel, Ia., has contracted with the Dodge Manufacturing Co., through its Chicago branch, for a driven sheave, 64x12 grooves; also for a 1¼-inch Dodge "Firmus" manila transmission rope and tension equipment.

The Pittsburgh office of the Atlantic Terra Cotta Co., has received the contract for furnishing the clay products to be used in a new \$100,000 mercantile building which is to be built in Pittsburgh by F. F. Nicola.

At the annual meeting of the Adamantine Clay Products Co., held at Martinsburg, W. Va., the following officers were elected: President, C. G. Cushwa; secretary-treasurer, S. L. Dodd; Superintendent, D. J. Jenkins. The business of this company is in excellent shape, and the outlook for a profitable season's run is very bright.

N. Hermes has resigned as superintendent of the Wooster Shale Brick Co., of Wooster, Ohio, and accepted a similar position with the Redcliff Clay Products Co., of Redcliff, Alberta, Canada. He assumed his new duties April 1.

F. W. Stickel, of Connellsville, Pa., has bought a large farm near that place, and will test the clays for the purpose of erecting a brick plant. An eleven-foot vein of fire clay has been found on the farm property.

William Overton, who was contemplating starting a new tile plant at Albany, Ore., has accepted a position with the Sidney Island Brick & Tile Co., of Sidney, B. C.

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COMBINED DISINTEGRATOR AND CONVEYOR—Capacity of 40,000 brick per ten hours, and only requires 12 h. p. This machine like all the other "Eli" machines is built with the idea of producing the greatest possible output of the highest quality with the least consumption of power.

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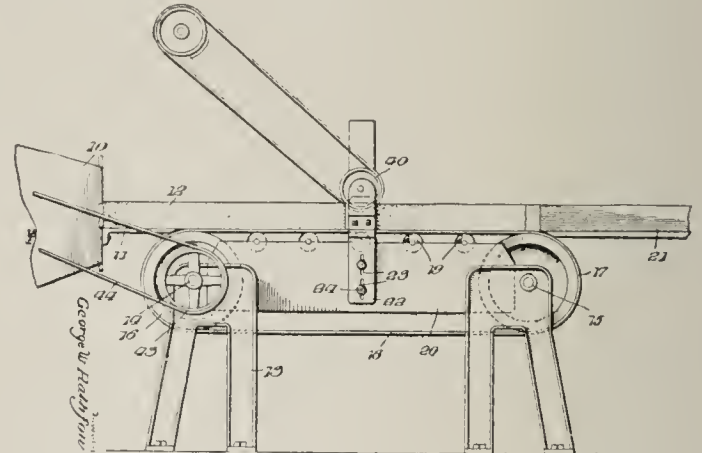
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MARION, IND.

Recent Inventions

1,004,818. MARKER FOR BRICKMAKING-MACHINES. George W. Rathfon, Brazil, Ind. Filed June 30, 1909. Serial No. 505,295.

A marker including a frame, a horizontal shaft mounted intermediately in said frame, a vertical shaft journaled in one side of the said frame, beveled gears carried by the adjacent ends of said shafts and intermeshed, rollers located upon said shafts, pluralities of pins radially extended from the peripheries of said rollers, said horizontal shaft being extended outwardly from one side of said

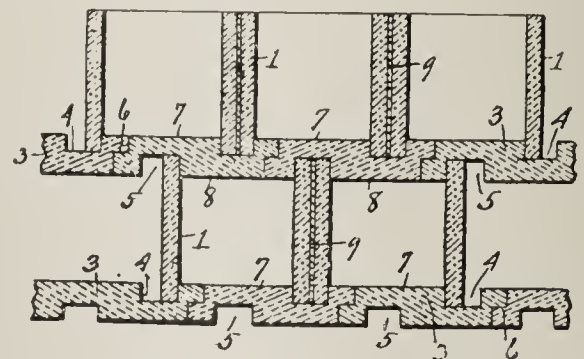


frame, a bracket disposed upon the side of said frame and engaged with the outer end of said shaft and a pulley located in the outer end of said shaft between said frame and said bracket.

In a marker the combination with a carrier having sideboards upon the same of a standard engaged on one of said sideboards, a shank positioned upon the opposite of said sideboards in registered relation to said standard, a horizontal arm outwardly extended from the upper end of said shaft, an offset portion vertically disposed upon the outer end of said horizontal arm, an upper horizontal arm inwardly extended from the upper extremity of said offset portion, the opposite end of said standard, and L-brace located between said upper horizontal arm and said offset portion, a horizontal roller located between said L-brace and said standard, a vertically disposed roller located between said L-brace and the lower horizontal arm, and means carried by the market for actuating said rollers.

1,009,519. BUILDING-BLOCK. Henry N. King, Adrian, Mich., assignor of one-half to Franklin D. Teachout, Adrian, Mich. Filed May 17, 1911. Serial No. 627,727.

A wall for a silo having a vertical door opening therein, hollow jamb-blocks forming the margins of the door opening, said jamb-blocks having vertical registering channels in the faces thereof which form the walls of the door



opening, reinforcing angle-iron bars set in said channels in the faces of the jamb-blocks, tie bars crossing the door opening and having flattened end portions which lie between the horizontal faces of the jamb-blocks and extend into the opening therein, and pins passing through the ends of said tie bars and engaging the inner faces of the wall of the jamb-blocks within said opening across the joint between said blocks.

Freight Tariffs

Washington, D. C., April 10.—During the past two weeks the following changes in rates on brick and clay and clay products have been filed with the Interstate Commerce Commission with I. C. C. number, effective date and rates in cents per hundred pounds unless otherwise stated:

Baltimore & Ohio, Sup. 3 to I. C. C. 11180, State March 5, interstate April 1. Brick and articles taking the same rates from Washington, to Dickerson Run, Pa., \$1.20 per net ton (R); conduits, brick from Aultman, Ohio, to East Greensburg, Pa., \$1.30; proofing, fire clay, from and to above named points, \$1.30 per net ton (R).

Also Sup. 4 to I. C. C. 12039, April 2. Brick and articles taking the same rates from Hoytville, Ohio, to Alexandria, Ind., \$1.20, La Fayette, Ind., \$1.10; Spencer, Huntington, Bakers and Semple, Ind., \$1.00 per net ton (R).

Boston & Maine, I. C. C. A-710, April 5. Common brick from Barrington, Dover, East Kingston, and other N. H. points to Dalton, North Brookfield and Pittsfield, Mass., \$3.80 per 1,000 brick; from Turners Falls, Mass., to Boston, Cambridgeport, East Boston, and East Cambridge, Mass., \$2.25 per 1,000 brick.

Buffalo, Rochester & Pittsburg Ry., I. C. C. 4405, April 16. Brick, building, paving and pressed from Bradford, Emery and Johnsonburg, Pa., to Colchester, De Lancy, Delhi, Frasers and Hemden, N. Y., \$2.30 per net ton (R).

New York Central & Hudson River, I. C. C. B-18558, April 15. Common brick from Corning, N. Y., to Wilkes-Barre, Pa., \$1.25 per net ton. (Above rate is published to meet competition and will not apply to intermediate points.) Paving brick from Corning, N. Y., to Taylor, Pa., \$1.30.

Also I. C. C. B-18562, April 16. Brick and articles taking the same rates from Beech Creek, Mill Hall, Krebs, Orviston, Patton, Pa., and other Pa. points to Berwick, Black River, Cambridge, Cornwall, Cornwall Junction, Crysler, Ont., \$3.55; to Edward, Embrun, Finch, Harrison, Ont., \$3.55; Ottawa, Ont., \$3.55 (A's); St. Regis Falls, N. Y., \$3.45 per net ton. Also rates to other N. Y. points.

Also I. C. C. B-18559, April 16. Brick and articles taking the same rates from Beach Creek, Krebs, Mill Hall, Lock Haven and other Pa. points to Hawkesbury, Ont., \$3.45; Montreal \$3.45 per net ton. Also rates to other Quebec and Ontario points.

Chesapeake & Ohio, Sup. 2 to I. C. C. 5340, April 7. Fire brick, fire clay and common brick from Ironton and Portsmouth, O., to Macon, Ga., 19¼c.

Philadelphia & Reading, I. C. C. Order J-3804, April 12. Brick from Guth, Pa., to Inwood, Kingsbridge, \$2.30, Ossining (R), \$2.70, and Irvington, N. Y., \$1.90 per net ton. Rate to Ossining effective March 14.

Erie, I. C. C. A-4731, April 8. Brick and articles taking same rates to Dubuque, Ia., from points in following groups: Mansfield, O., \$2.80; Akron, O., \$2.85; Cleveland, O., \$2.85; Mahoning, Shenango Valley, \$2.95; East Liverpool, O., \$3.05; Oil City, Pa., \$3.15; Jamestown (R) and Buffalo, N. Y. (R), \$3.15 per net ton. This is a very large tariff, applying only on brick and articles taking same rates and should be secured by interested shippers in C. F. A. territory.

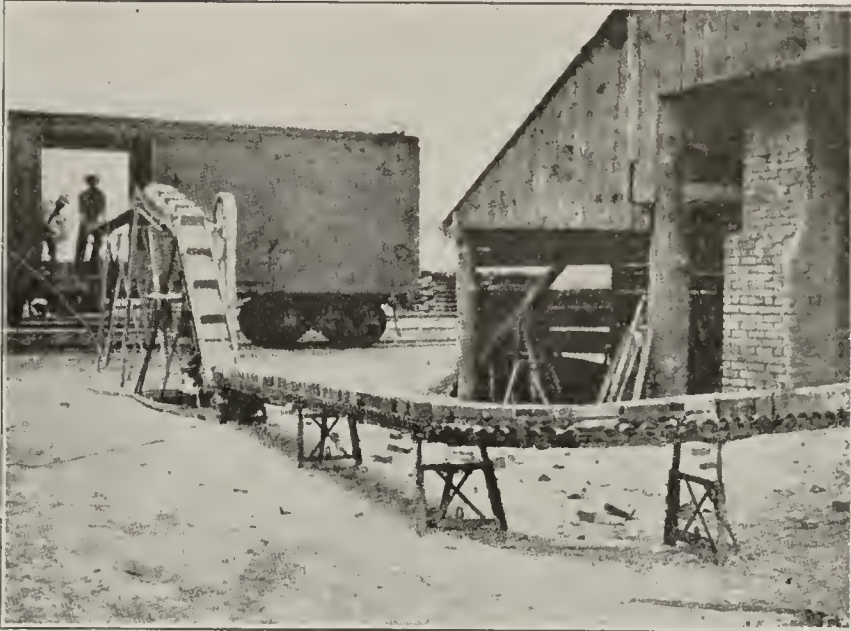
Northern Pacific, I. C. C. 5263, April 6. Brick from Dickinson and Hebron, N. D., to Battleford, North Battleford, Prince Albert, Sask., common, pressed or hollow brick 27½c; fire brick and fire clay, 42c (R); from same points to Winnipeg, Man., common, pressed or hollow brick, and fire brick and fire clay, 17c.

P. R. R., I. C. C. H-479, April 10. Common brick from Winslow Junction, N. J., to Mt. Carmel, Pa., \$2.00 per net ton (R).

C. St. P. M. & O., Sup. 6 to I. C. C. 3863, April 9. Drain tile from St. Paul, Minneapolis, and Minnesota Transfer to Madison, Mendota, Evansville, Beloit, Lodi, Devil's Lake, Baraboo, Wis., and other Wisconsin points, 10½c.

C. I. & L., I. C. C. 2484, April 18. Clay from Clay City and Patricksburg, Ind., to Terra Cotta, Ill., \$1.55; Joliet, Ill., 95c.

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You had an awful time last year

trying to deliver your brick on time. The strong demand, rush orders, scarcity of labor, shortage of cars and bad weather are some of the troubles you were up against last year.

If you have the will, we have the way—

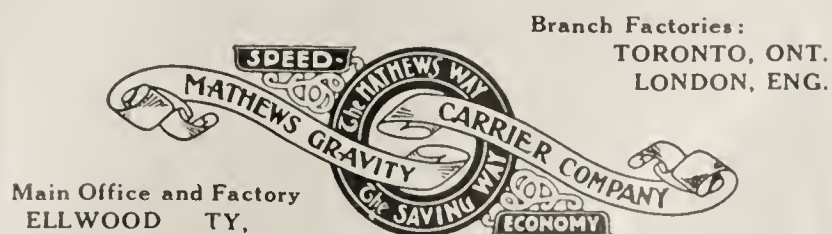
to put more good nature into your system and more profit into your business than you have ever had before, by doing away with *all* your troubles and *half* your handling expense.

Over a hundred brick manufacturers

have written us their experience after using the Mathews Gravity Brick Conveyor for loading brick direct from kilns into cars. Not one of them would go back to the use of wheelbarrows for this work.

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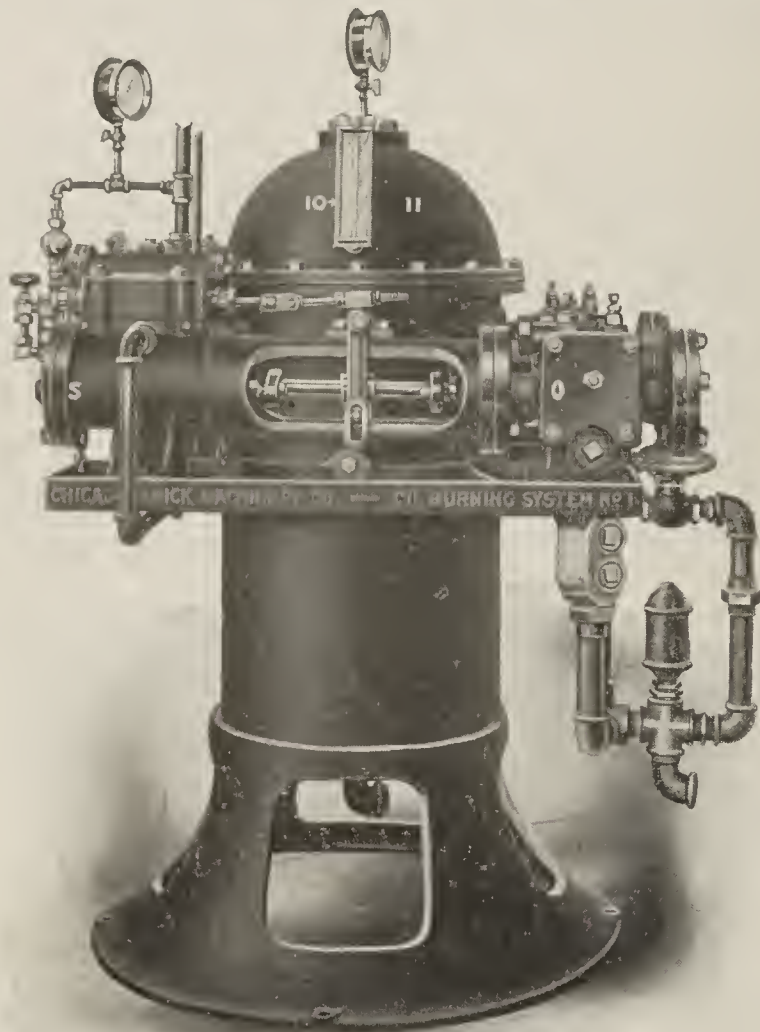
are losing money every moment you continue to put off buying a system of conveyers. Don't wait until the rush comes, as it will then be too late to make prompt deliveries. Ask for our catalog and prices *now*.



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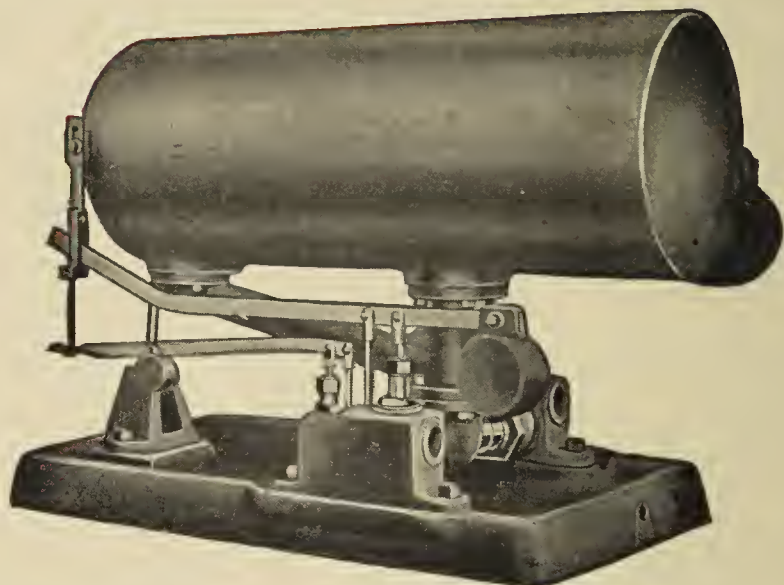
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CLAYWORKERS' BOOKS.

Clayworkers' Handbook	2.00
Clays: Their Occurrence, Properties and Uses (Ries)	5.00
Clayworking Industry of the U. S. (Ries)	2.50
Bibliography of Clays and Ceramic Arts	2.00
Bricks and Tiles	1.20
Economic Geology (Ries)	3.50
How to Analyze Clay	1.00
American Ceramic Society's complete translation—2 Vols.	15.00
Transactions American Ceramic Society—Vols. I-VIII. (Write for prices)	1.00
Kiln Records (Richardson)	3.00
Henley's Book of Recipes	1.00
Hand Brickmaking (English Edition)	1.00
Brick Drying (English Edition)	1.00
Drying Brick (Richardson) .....	.25
Manufacture of Glazed Bricks	2.50
Manufacture of Roofing Tile	1.00
Modern Brickmaking (Searle)	5.00
Practical Brick and Tile Book	2.40
Scumming and Efflorescence .....	.50
Seger's Collected Works (Condensed) ..	3.50

POTTERY AND CERAMICS.

Notes on Pottery Clays	1.50
The Glazer's Book (E. L. Raes)	1.00
Grand Feu Ceramics	5.00
Architectural Pottery	7.50
Observations on Pottery .....	.60

DRAINAGE AND SEWAGE.

Sewers and Drains (Marston)	1.00
Practical Farm Drainage (Elliot)	1.50
Hints on Farm Drainage .....	.25
Land Drainage Engineering (Elliot) ..	2.00
Sewer Pipe and How to Make It, by Anton Vogt and Jno. A. Turner .....	.25
Sewage Disposal Works, Their Design and Construction (W. C. Easdale) ..	4.00
Life of Cement, by Wheat. (Write for prices)	

PRODUCER-GAS.

Producer Gas and Gas Producers (Wyer) ..	4.00
Gas Engines and Producer Gas Plants ..	2.50
Chemistry of Gas Manufacture (Royle) ..	4.50
Power Gas and the Gas Producer (Miller)	1.00

MISCELLANEOUS.

Ads That Sell Brick	5.00
Bungalow Book .....	.50
Radford's Brick Houses, and How to Build Them	1.00
Refractories and Furnaces	4.00

BUILDING CONSTRUCTION.

Brickwork and Masonry (Mitchell)	3.00
Details of Building Construction	1.00
Practical Lessons in Architectural Drawing	2.50
Our New House—How We Plan to Build It	1.50
Principles of Architectural Design	4.50
Building Construction and Superintendence—Part I, Masons' Work	6.00
Practical Brick Laying (Maginnis)	1.50
Art of Practical Brick Cutting and Setting .....	.60
Brickwork .....	.60
Rudiments of Bricklaying .....	.60
Gilbreth's Brick Laying System	3.00
Building Materials (Middleton)	4.00
Building Mechanics' Ready Reference ..	1.50
Building Superintendence (Nichols)	1.50
Contracts and Specifications (J. C. Plant)	1.00
Estimating (Nichols)	1.00
Masonry Construction (Phillips-Byrne) ..	1.00
Strength of Materials (E. R. Maurer) ..	1.00

ELECTRICITY.

Electricity Simplified (Sloane)	1.00
Electricity (for beginners) .....	.25
Electrical Circuits .....	.25
Static Electricity .....	.25
Electric Lighting .....	.25
Electric Wiring and Lighting (Knox-Shaad)	1.00
Power Stations and Transmission (G. C. Shaad)	1.00
Practical Lessons in Electricity (Crock-er-Cushing-Sager)	1.50

BUSINESS BOOKS.

Business Management, Part I, (J. B. Griffith)	1.50
Business Management, Part II, (Russell-Griffith)	1.50
Commercial Law (J. A. Chamberlain) ..	3.00
Corporation Accounts and the Voucher System (J. B. Griffith)	1.00
Factory Accounts (Hathaway-Griffith) ..	1.50

PAVING AND ROAD ENGINEERING.

City Roads and Pavements (Judson) ..	2.00
Highway Construction (Phillips-Byrne) ..	1.00
Treatise on Roads & Pavements (Baker) ..	5.00
Directions for Laying Brick Pavements —Free.	

POWER PLANTS AND FUEL.

Engineering Laboratory Practice (Smart)	2.50
How to run Engines & Boilers (Watson)	1.00
Modern Steam Engineering (Hiscox) ..	3.00
Tulley's Handbook	3.50
Engine-Room Chemistry	1.00
The Compound Engine (Tennant)	1.00
Gas, Gasoline and Oil Engines (Hiscox) ..	2.50
Smoke Prevention and Fuel Economy (Booth)	2.50
Boiler Accessories (W. S. Leland)	1.00
Gas Engines and Gas-Producers (Marks-Wyer)	1.00
Steam Boilers (Newell-Dow)	1.00
Steam Engines (W. S. Leland)	1.00

MACHINERY.

Machinery Repair & Maintenance (Barber)	3.50
Holisting Machinery (Horner)	3.00
Mechanical Engineering (Sames)	2.00
Machine-Shop Work (F. W. Turner) ..	1.50

Help your prospective customer decide on the style of house he wants, by showing him the many beautiful designs contained in the Bungalow Book. They will make him appreciate the fact that an attractive and substantial brick home can be built at a reasonable cost. Create an interest in clay products by distributing a few of these books among prospective home builders in your city.

Price, 50 cents, postpaid.

BRICK AND CLAY RECORD, 445 Plymouth Court CHICAGO

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

Pioneer Brick Advertiser Elected B. B. A. President

William Hanley

President Bradford Pressed Brick Co., Bradford, Pa.



FIRST and foremost, William Hanley believes in brick, in the fireproof house and the dustless road. He encourages others to believe with him by making exceptionally good brick and by giving exceptionally good service. He finds these others by advertising and brings them home by a trademark. To the Building Brick Association, standing as it does for brick, brick quality, brick publicity and brick protection, he brings the experience of over twenty years of active, consistent work based on the policies to which the association is dedicated.

Born on a farm in Belleville, Ont., he left the broad acres behind him before he had reached his majority, his aptitude for constructional work leading him to learn the carpenter's trade. To this he added architectural draughting and started as a building contractor in Oil City, Pa.

Through the purchase of the Bradford Pressed Brick Co.'s plant in 1900, Mr. Hanley became a claycrafter. Two years after he had assumed control he doubled the capacity, and a few years later built another plant. He now makes both dry-press and stiff-mud brick that are standards of excellence in their respective spheres. Two years later he started another plant, where he manufactures hollow brick, partition blocks, radius chimney blocks and fireproofing generally. All these enterprises have proven phenomenally successful and Mr. Hanley is a very large factor in the clayworking world.

He began advertising Bradford brick more than twenty years ago, at a time when but little brick advertising was being done. His publicity methods and the excellence of his product did for Bradford, Pa., what a certain amber fluid did for Milwaukee—he made Bradford famous. Later, he waged a long, bitter and exceedingly expensive fight to protect the trademark registration he had received on the name "Bradford" as applied to brick, and won a notable victory.

When the Building Brick Association of America was organized in 1910, Mr. Hanley was elected a director and a member of the executive committee. He was elected vice-president in 1912, and at the meeting held in Chicago during the convention of the National Brick Manufacturers' Association was chosen to lead the forlorn hope. Instead of "buying flowers," as had been suggested, the B. B. A. began to fight for life. No man on its roster is better fitted to apply pulsometer methods than William Hanley.

For the Building Brick Association of America needs one thing that Mr. Hanley possesses in large measure—success. Its principles are sound, its creed commendable, its achievements notable. But success has passed it by and left it marking time in the march of progress, much as the Bradford Pressed Brick Co. stood when Mr. Hanley bought it at a bargain. Had fortune smiled on the B. B. A., its principles, creed and achievements would have made greater history than any other movement in the clayworking industry.

Interested financially in many different forms of burned clay building materials, Mr. Hanley can bridge the imaginary chasm that so many pessimists believe separates face brick from common, and common from hollow brick. He knows the one thought and word upon which clayworkers can combine, in order that their stories may be uniform. He has the enthusiasm, the broad view, the intuitive mind that makes him, in very truth, "the Moses who will lead us out of the wilderness."

Coming into power at a time when the B. B. A. has little in the way of visible assets but the echo of its advertising, copyrights on the best brick selling literature the craft has ever printed and a quantity of books that should be in the hands of prospective builders, rather than on the shelves of the association's office, Mr. Hanley's administration must be constructive. He finds a well built foundation and a fund of faith instead of a bank balance. The whole waits for a man who combines architect-builder-clayworker with the magic knowledge of how to obtain success. This man will design and then build imperishably a structure of publicity that will put burned clay in its proper place, known from coast to coast as the foremost, because the best, building material bestowed by Providence upon ungrateful and unappreciative man.



VOL. XLII.

CHICAGO, MAY 1, 1913

Number 9

Ashtabula's Mistake

Slipshod Road Laws Holds Ohio County in Poor Road Class

Ashtabula County, Ohio, is very much interested just now in its country roads, and an investigation which was made recently may be the means of arousing the entire state to action that will correct a very inadequate law and save Ohio from going through the same experience New York had of wasting millions for permanent roadways before it learned the lesson of proper construction.

Ashtabula county has spent \$319,533.36 for new roads since 1907 and most of its investment was in macadam. One lone brick road was paved during this entire period.

At a good roads meeting held April 12 at Conneaut, the metropolis of Ashtabula county, an attempt was made to ascertain the relative cost of maintenance, but the system of building and repairing is so antiquated and inadequate it was declared impossible to supply any actual figures in most of the cases.

S. C. Andrews, of Conneaut, who made a special investigation of the cost and upkeep of the highways, after reviewing the building laws and calling attention to their inadequate provisions, said:

The figures shown herein indicate that the road which is cheapest in first cost may be the most expensive covering a term of years. Note the cost of Conneaut macadam No. 1, Conneaut macadam No. 2 and Monroe road from the south line of Conneaut township to Bushnell, which were built in 1907, 1908 and 1910 respectively. These roads are now being resurfaced at an expense, estimated by the county surveyor, to be approximately \$215 per foot per mile, and this resurfacing must be repeated every few years due to traffic on these roads.

Following the above comment, which would indicate that the brick road has the best of the argument, Mr. Andrews prints a list of the roads, their location, date of construction, length, total cost per mile and cost per mile for each foot in width. The first two roads improved of which the record was kept were of macadam. These cost per mile for each foot in width \$631.93 and \$762.33 respectively. The cost of the brick road was \$950.48. The concrete roads average about \$600 each, while the Tarvia X macadam is \$1,008.23.

Most of the macadam and concrete roads have been resurfaced, while the brick road has had little or no repairs on it. Mr. Andrews called attention to the fact that the resurfacing work that is being done today is costing about \$215 per foot, or almost as much as the original cost, and that this work has to be done every few years.

President Deckman of the National Paving Brick Manufacturers' Association was one of the speakers at the banquet held in the evening. William C. Perkins, consulting engineer of the Dunn Wire Cut Lug Brick Co., who was for years an engineer connected with the State Highway department of New York, explained the good roads system in New York state. New York had bonded for \$100,000,000 for improving the state roads, he said. About 2,400 miles of roads were to be main state roads running east and west and north and south. Other roads were combined state, county and township roads, but the abutting property levy had been eliminated. Eight-tenths of the cost of these improvements fell upon New York city and Buffalo, yet both cities voted strongly for the constitutional amendment which permitted the issue of bonds.

There is a system of road inspection. Each five miles of state road has an inspector, like a railroad track walker, who receives \$78 per month, furnishes his own horse and wagon, and is supplied with materials. This inspector keeps his five miles of road in condition all the time. It is not allowed to wear or deteriorate.

Of late the policy of the New York State Commission is, so far as practicable, to lay brick pavements. The commission takes the ground that as the bonds will mature in fifty years the state ought to have roads of the most permanent construction, so that it will save something to show for the money expended when the bonds are paid.

Mr. Perkins explained the county and township part of the system very clearly, and he extolled the King drag as a dirt road implement, saying that in one year, with proper drainage, a bad dirt road could be made so good with persistent dragging that it would compare favorably with a macadam.

The good roads meeting drew many of the most prominent paving brick manufacturers of the country to Conneaut, most of whom were licensees of the Dunn Wire-Cut-Lug Brick Co. These licensees held a meeting during their stay in the little city and took a very decided stand in favor of the Dunn block, expressing themselves as firmly of the belief that the Dunn block eventually will be the exclusive paving material of the future.

Those manufacturers present at the licensees' meeting were: Metropolitan Paving Brick Co., Canton, O.; Deck-

man-Duty Brick Co., Cleveland, O.; Bessemer Limestone Co., Youngstown, O.; Peebles Paving Brick Co., Portsmouth, O.; United Brick Co., Greensburg, Pa.; Corry Brick & Tile Co., Corry, Pa., and W. T. Blackburn, representing the Wabash Clay Co., Veedersburg, Ind.; Clinton Paving Brick Co., Clinton, Ind., and the Alton Brick Co., Alton, Ill.

The licensees adopted the regular standard Dunn block requiring 40 to the yard and a thickness of $3\frac{1}{2}$ inches, with lugs extra. Each one of the plants mentioned above agreed to make this size block exclusively.

Flood Relief Fund is \$3,169.05

BRICK AND CLAY RECORD'S RELIEF FUND

Previously reported	\$3,056.05
Joshua Oakes & Sons Co., Haverhill, O.	1.00
National Fire Proofing Co., Haydenville, O.	80.00
R. C. Gangewere, Chattanooga, Tenn.	1.00
O. Baird, Parkhill, Ont., Canada.	5.00
A friend, Drew, Ont., Canada.	1.00
Employees Beaver Clay Mfg. Co., New Gal- ilee, Pa.	25.00

Total May 1.....\$3,169.05

Dayton shows the same undaunted spirit that made San Francisco the admiration of the world. In a letter to Chicago Commerce, Fred W. Fanusher, secretary of Dayton's Chamber of Commerce, says: "The sun is shining. Tons of dirt are being rapidly removed. 'Open for Business' signs are everywhere. There is a spirit of optimism. However, some of us know that the crucial time will be three or six months from now, when the creditors will be asking for their money."

Another Dayton man writes the Chicago Daily News, saying: "Within two weeks 75 per cent of the factories have resumed operation. Every man, woman and child who could work in Dayton has worked, and all are facing the future with a fortitude that must win back what they have lost, and while the property loss has been estimated at \$100,000,000, the loss of life was remarkably small, and will not exceed 250 lives. Dayton will make good every obligation. Her people are working as a unit as never before, and will come out of this a better city than ever. Ninety per cent of her factories are now able to fill their orders, and what we most need is not charity, but orders, to keep our factory people employed."

When the flood in the Ohio river hit the Upper Ohio valley, the Globe Brick Co., of Wellsville, O., whose plant is located across the Ohio river at Kenilworth, W. Va., lost more than three million green fire brick and pavers, all of which had been set in the kilns. General Manager Fred G. Porter, who is a son of Capt. John Porter, the "Fire Brick King," went to the plant in flood time, but he had to use either a skiff or motor boat.

The flood occurred right in the midst of the busy season of this company, and after operations resumed there was still further delay in making shipments on account of the New Cumberland branch of the Pan Handle Railroad being out of commission.

Deserts Her Kitchen for Brickyard

THIS NEGRESS SOLVED PROBLEM
OF LIVING BY CRUSHING BRICK



By deserting the kitchen for the brick yard, Mary Howard, a negress of New Orleans, has been able to solve for herself the high cost of living problem. But, incidentally, Mary has brought forth another knotty labor problem that is liable to become in the future a serious drawback to some parts of the South.

The negress recently went up to the foreman of a crew wrecking some old buildings at Commerce and Giord streets New Orleans, and asked:

"Can't yoh gimme a job, Boss?"

"Well, there's nothing around here you can do; I employ only men," replied the astonished foreman.

"Cain't yoh put me to wo'k breakin' bricks?" asked the negress, looking in the direction of some men pounding bricks. "Ah'm awful strong; look at mah muscles," she added.

She was engaged, and she rolled up her sleeves and went to work at \$1.50 a day.

Mary said she had been washing clothes for many years, but made only \$2 a week at it. Then she tried cooking, but that brought her only \$10 a month. It was after cooking a long time that she got the idea of tackling a man's job and getting a man's pay.

Mary is doing her new work well, and her boss is satisfied, but there are those who think there will soon be large numbers of buxom negresses seeking the jobs now filled by men in the South, and that this is apt to become a big problem in cities where there is a large negro population.

Selling Brick

SALESMANSHIP AND ITS APPLICATION BY THE MANUFACTURER OF BURNED CLAY PRODUCTS

By Iverson C. Wells

This is a series of heart-to-heart talks on one of the most important and most neglected departments in the successful conduct of a clay product plant. Mr. Wells also will review current advertising by clay plants, as publicity is one of the essentials of good salesmanship. Manufacturers are invited to submit copies of their advertising for critical review.

stands his own weaknesses and carefully builds up a bulwark against them. He understands his strong points so that he can use them to the best advantage.

Once satisfied that you really know yourself start out to learn something about what you are going to sell.

If you are selling drain tile go to the farmer who buys drain tile and find out WHY and HOW drain tile are used. Study the conditions on his farm and those on the next-door farm and the next—making sure that you cannot know too much.

Procure whatever text books that are published on the subject of farm drainage and study them. Read what experts have to say on the subject. Absorb all the whys and wherefores possible until you are saturated with the subject of farm drainage.

When you have gotten all the knowledge and information possible turn your attention to the plant. Go into the clay pit and the factory and watch the process. Follow the ware into the dryer and the kiln and the kiln cars. Follow not only every step of the manufacturing of drain tile but the methods used in filling orders and the shipping. Do not let a single detail escape you, because sometimes even the smallest item may prove the most valuable to you.

If you have done these things well and you have the determination to succeed you need never have fear that you won't win.



A SATISFIED customer is one of the most profitable investments in a clay plant. Some brick salesmen make the mistake of considering that a customer once sold ceases to be of any further interest to him because men buy brick only once in a lifetime.

One of the biggest brick and tile plants in the country makes a specialty of keeping in touch with its customers and never letting that customer feel that he has ceased to be of interest.

For instance, a farmer buys hollow block for a silo. The signing of the order and the payment of



SUCCESS usually is measured by the amount of effort we make in seeking it. Sometimes Fortune favors one who makes no effort to find her, but ninety-nine times out of a hundred man has to seek her before he bring her smiles to bear upon himself.

The fact that we have done ANYTHING proves that we first must have made SOME sort of an effort or we would not have succeeded. Success, then, depends largely on effort and whatever line of human endeavor we may take up, if we hope to accomplish anything, requires determination to win.

This fact is just as true with the young brick salesman as it is with the man who made the Panama Canal possible. If we are successful selling brick we first must make up our mind that we are going to sell brick.

Man has conquered the sea, the land and the air just because he said to himself he would. If he WILLS to move a mountain the mountain will be moved. If he WILLS to eliminate space and time he DOES it.

Determination to succeed—dogged determination, will make a high grade salesman out of the most unpromising timber. Without this quality the brainiest man on earth would fail.

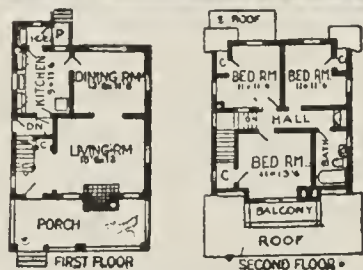
The man who starts out to sell brick first of all must say to himself: "I'm going into this game to win. It's a big proposition but I know I can do it and I WILL do it."

With his jaws set firmly he must take up the battle, for one can not expect to do much without a fight of some sort.

And the first battle is apt to be with himself.

A good salesman always knows himself. He under-

Semi-Bungalow Brick House



One of the Best Plans for a Small "BRICK"

House That Has Been Designed.

A large porch extends across the front. The size of the reception hall is unusual and the convenience of a coat closet at the end is worthy of note. We find a fire place centering at the front of the living room and a dining room most conveniently arranged as to wall space, with the kitchen planned to win the approval of any woman. Note the arrangement of the sink directly under a window, with plenty of drainage board space on either side and cupboards immediately above. Kitchen opens through to stairway leading to basement as well as to refrigerator room and also on back porch. Three bed rooms with good wall space and a large closet in each, a good sized linen closet in the hall, and a well planned bath room are found on the second floor.

We will furnish the BRICK and HOLLOW BLOCKS for this house for about \$300.00, not to exceed \$400.00, including a 12-in. hollow wall basement. For further information call on or write the

Algona Brick & Tile Works
ALGONA, IOWA

We furnish plans and specifications free with first order for a house.

The "Can't Afford It" Boomerang

Years ago men used to say, "I am going to build my house of wood because I can't afford Brick." Now the well informed home builder says, "I can't afford to use anything but Brick." The "Can't Afford It" argument has turned completely around and "headed off" itself. What once was accepted as a Reason now is a Joke.

Only the very rich man can now afford to build of wood—not financially independent can't afford the expense of maintenance and the rapid depreciation of the frame house. He should put his money into a house that does not shrink in value, that needs no repainting and repairs in winter.

On an East End street in Cleveland are two houses on adjoining lots. One is of Brick and the other of wood. Both were built about 11 years ago. The frame house has cost the owner \$1,250 for exterior paint and repairs. The owner of the Brick house has spent less than \$200 in maintenance. If both owners were forced to sell their houses the Brick house would bring nearly double the price of the other. The up-keep bill on the frame house will increase rapidly from now on. That is WHY the ordinary man can't afford to build his home of anything but Brick.

Cleveland Face Brick Association
The purpose of advertising, developing and promoting the use of face brick.

This Fireplace of Brick

is especially suitable for the library, sun parlor or living room.

Wide Range of Colors and Textures
to Select From in Our Exhibit Room

The important feature of selecting a brick to harmonize with the finished woodwork of the interior is the wide range of colors and textures shown in our exhibit room.

PARKE & SON COMPANY
DECATUR, ILLINOIS



A Terra Cotta TILE ROOF offers every advantage to the builder

It gives stability and character to a building while adding to its architectural beauty. A poor roof on a house gives it a cheap appearance, while an attractive durable roof increases the selling value. A Tile Roof affords the only perfect shelter. It protects from extreme heat and cold as well as moisture—the only roof that is absolutely proof against fire and leaking. It requires no repairs—does not fade, tarnish or decay—is everlasting. The only expense is the first cost—cheaper materials in time cost just as much or more.

Write for our illustrated booklet "The Roof Beautiful," printed in colors, referring to the origin and use of Tile. It contains views of many beautiful homes with roofs of Terra Cotta Tile and is sent free on request to any prospective builder.

LUDOWICI-CELADON CO.
Manufacturers of Terra Cotta Roofing Tiles
General Offices: Monroe Building, Chicago, Ill.

THE CHARM OF GOOD BRICKWORK

"Bradford Reds"

"Bradford Ruffs"

As a structural material brick has always held an enviable position, but during recent years its range of usefulness has greatly widened, as is evident to all.

"BRADFORD REDS" and "BRADFORD RUFFS" have contributed greatly to this result. They are hard and impervious, but in addition present a surface texture that readily combines with an effective mortar joint to produce a wall the artistic appearance of which is generally acknowledged. It possesses a charm that is indescribable. What renders this fact of particular interest and value, are the further facts that the cost of "BRADFORD REDS" and "BRADFORD RUFFS" is extremely moderate, and freight rates are such that the BRADFORD product is available everywhere.

Let us send you samples
A postal card will bring them

"Bradford Pressed Brick"
(Trade Mark Registered U. S. Pat. 618)

BRADFORD PRESSED BRICK COMPANY
The Red Brick People
Bradford, Pa.

the bill does not close the relationship between that farmer and this manufacturer.

A record of all sales is given each salesman who is told to make it a point to visit every customer in his territory even if he has to inconvenience himself to do it.

A few weeks after the farmer has received his shipment of hollow block and his silo has been constructed the salesman calls on him. The customer is told that the manufacturer has sent the salesman out to ascertain if everything about the shipment is all right. Should there be some mistakes or errors these are rectified immediately. The customer is never given the opportunity to tell his neighbor how BADLY he has been treated. If he speaks of the manufacturer at all it is to PRAISE him and his methods.



To prove that it pays to be fair and just with your customers even if you never sell but once I want to relate a little incident that was told me by an Iowa manufacturer recently. An order for a car of drain tile had been received from a farmer in a nearby

town. The car was being loaded when the farmer wrote in and asked that it be canceled as unforeseen circumstances made it necessary.

The average manufacturer would have forced that farmer to take the car of tile if he COULD be forced, but the Iowa man is not an average manufacturer. He wrote the farmer that he was sorry conditions warranted the cancellation and assured him that when he did get ready to buy he would be pleased to attend to his wants. Nothing more was heard from the farmer until some three or four weeks later when he wrote in to say that two of his neighbors were going to do some tiling and had agreed to take the shipment he originally ordered.



SPECIAL attention is directed to the reproduction of the five newspaper ads in this department. Two of these—the Algona and the Parke ads, possess unusual interest for the reason that they inaugurate two new local publicity campaigns. The Algona ad is one of a series that Manager Munson has planned and is the nucleus of a strikingly original co-operative

publicity plan which he hopes to get his fellow brickmakers interested in, especially in Iowa.

Mr. Munson proposes that each manufacturer who goes into his scheme prepare one or more ads similar to the one he used in the current issue of his home paper. Cuts showing plans for inexpensive brick houses are to be prepared and following a brief description the price of the MATERIAL and not the house is stated.

After the ads all have been prepared and the cost pro-rated these are to be sent around to the members in an endless chain, each manufacturer using one of the ads in his local paper and then forwarding it to another member. This makes the expense of the cuts small as one cut answers for the entire list of advertisers.

The collective effect that a score or more of manufacturers advertising simultaneously will have is going to make the people of Iowa think about brick and hollow tile as they never before have.

The idea is a good one and need not be confined to Iowa. A brickmaker in New York can just as well exchange cuts and ads with Mr. Munson as the manufacturer in the adjoining town.

The Parke & Son ad is an exceptionally well-planned piece of "Copy," and means that these Decatur merchants are creating a local demand—not only for brick for building purposes but for the many useful and artistic ways in which they can be used.



THE REASON WHY.

The following clever poem, which was offered by "a delegate" to a recent good roads convention explains why brick pavements are often pronounced unsatisfactory. It is also a true-to-life description of brick streets in Chicago.

They took a few old bricks
And they took a little tar,
With various ingredients
Imported from afar.
They hammered it and rolled it,
And then they went away—
They said they had a pavement
That would last for many a day.

But they came with picks and smote it
To lay a water main,
And then they called the workmen
To put it back again.
To run a railway cable
They took it up some more,
And then they put it back again
Just where it was before.

They took it up for conduits
To run the telephone,
And then they put it back again
As hard as any stone.
They took it up for wires
To feed the 'lectric light,
And then they put it back again,
Which was no more than right.

Oh, the pavement's full of furrows,
There are patches everywhere;
You'd like to ride upon it,
But it's seldom that you dare.
It's a very handsome pavement,
A credit to the town,
But they're always diggin' of it up
Or puttin' of it down.

Concrete Theatre Falls in on Workmen



Ruins of What Was to Have Been a Moving Picture Theatre in Chicago. The Concrete Collapsed Fortunately Before the Building Was Occupied.

A concrete collapse in Chicago, somewhat similar to that of the Home Theater Building, which was noted in a former issue of this journal, occurred recently, when the concrete roof of a three-story building, under construction at 2455 Archer avenue, suddenly gave way, carrying the brick walls in its wake. The workmen had a narrow escape from death; two, who were buried in the debris, being rescued by firemen. It was stated by the architect that the concrete froze and when it thawed it slipped, carrying the steel and brick with it.

Brick Preserved by Historical Society.

Two brick with a history are being carefully preserved by the State Historical Society of Kansas. The brick were used in the construction of the old Constitution hall, at 427 Kansas Avenue, Topeka, the remaining portion of which was recently torn down.

Len Horn made the brick in a brickyard he established in Oakland in 1855. The brick are still in good condition, though they have been in the building over fifty years.

Paint Does Not Improve Brick Walls.

When constructing a house of brick, be sure and select a brick that will wear well, one that will not go to pieces with age, or lose its beauty. A brick wall should be of a quality that will never need paint to cover up its defects. No painted brick wall looks good to us, and a good brick will save all trouble about exterior painting for all time to come. When we consider the dry and warm construction of the brick veneered house, we have much to commend it to the people who prefer brick construction to that of the all frame.—The National Builder.

WHAT'S THE USE

—of writing hundreds of letters to clay manufacturers when you want a Position—or want to Sell some Articles about your Plant, which you no longer need, when for a dollar or two, spent for an Ad in "Brick and Clay Record's" Classified Dept., you can reach 7,000 clay manufacturers, and tell them just what you want? The increasing use of this medium is its best recommendation. Rate, 8 cts. per word: minimum charge, \$1.00.

Bricklayer Wins Fame as an Athlete

GREAT FINN RUNNER WIELDS
TROWEL WHILE RECOVER-
ING FROM INJURIES

Athletes must keep in "good condition," even during the periods between training. Here is one that takes a novel method, for he wields a bricklayer's trowel. The athlete shown below smiles as though he loved his work, but that may be because of the \$6 a day he earns while "resting."



ANNES KOHLEMAINEN, the wonderful Finn runner, who came into prominence by taking one of the big events at the Olympic games last year in Stockholm, is a bricklayer by trade and today is plying his trade in New York City.

Kohlemainen came to the United States several weeks ago and captured four records, three of them being world's

marks. In a training stunt he injured one of his legs so severely as to keep him off the track temporarily, but he refuses to be idle and being a bricklayer by trade, he applied for a union card, was given one and secured employment on a building in the Bronx.

The athlete is shown at work in the accompanying picture, the smiling young man at the left being him.

What Does Your Power Cost?

STIFF MUD PLANTS FIND QUESTION AN IMPORTANT ONE TO BE SETTLED

By Richard R. Hice

This paper, treating on the problems of power as it is presented in the stiff-mud plant, was read by Mr. Hice before the American Ceramic Society and appears as part of the published transactions, Vol. XIV. The reader will find it an unusually valuable contribution to the industry.



ONE of the problems in connection with the equipment of any clay-working establishment is that of power, and this is perhaps more important in stiff-mud brick plants than in other branches of the clay industry. When we examine the catalogues and literature issued by the various manufacturers of brick-making machinery, nothing is more marked than the absence of any information, at least of a reliable character, concerning the power needed. The fact that there is a wide difference in the ideas of different machinery people as to the power required by machines, of supposedly the same capacity, is shown by the difference in the diameter, width of face and speed of the pulleys ordinarily used. It must be admitted that machines of practically the same capacity, differently proportioned, will require in some cases somewhat different power equipment. This, however, is by no means so true of some classes of machinery as of others.

Clays Vary in Power Required.

In the case of dry pans we should not expect much difference in the power consumption in grinding, say, the material for twenty-five hundred brick per hour in pans of different makes, using the same clay. It is to be granted that different clays may require different amounts of power, even when the capacity of the pan may be the same. One clay may be quite hard but drop readily through the screen plates, another may be quite easily crushed, but, owing to physical conditions, arches over the slots in the screen plate and does not so readily pass out of the pan. In such cases there may be quite a difference in the power consumption. On the other hand, where the same clay is used in pans of different makes and different proportions of weight of mullers, width of face, and arrangement of slots in the screen plates, there may be considerable difference in the power consumption, but if the arrangement of the screen plates is such as to allow the material to pass through readily there should be but little difference in the power consumption of different makes of pans.

Pugging Makes Marked Difference in Power.

In the matter of pug mills there is a marked difference in the power consumption, due to the amount of pugging given the clay and not to the difference in shape and "set" of the knives, as generally assumed.

In auger brick machines (turning out the same number of brick per hour, of the same clay, screened to the same fineness and pugged the same) there is certainly but little difference in the power consumed where the brick are the same density. There is in practice a very marked difference in the density of brick made on different machines, the shape and proportion of the barrels, size and character of the auger and die, being designed to produce brick with perfect corners and reasonably free of laminations, and not of any fixed density. This difference in the column is shown in the difference in shrinkage of brick

made of the same clay, ground and pugged the same, when made in different machines. The density of the burned brick may be practically the same, notwithstanding the difference in the column as it comes from the die.

In all the foregoing generalizations, no consideration is, of course, given to the matter of internal friction of the machine itself, or to the fact of more friction between the moving clay and the machine in one case than in another. These are factors that are largely constant and which, if considered, mean a consideration of particular makes of machines. In the case of auger brick machines, it can be stated as a general rule that the denser the column the more friction between the clay and the machine to be expected, and this is true regardless of the proportion of the machine barrel, or the shape of the knives and dies.

It is the object of this paper, not so much to point out how much power is required for any particular machine, but rather to show the relative amounts of power required by a particular plant operated by a fairly good steam installation, and by the same plant when rebuilt after a fire and operated by electricity. It is recognized, of course, as suggested in the foregoing statements, that these figures should not be used quantitatively with some other material; but it is believed the results will hold relatively good in all cases.

Steam Plant Installation and Power Consumption.

This plant, as ordinarily designed, was equipped with an 18 x 42 Corliss engine developing 175 h. p. The material used was a low grade of fire clay from the lower Kittanning vein, relatively hard to grind and screened rather fine. The power was taken from the engine to a line shaft, from which the machinery was all driven. The dry pans, pug mills, and brick machine were driven by belts, and the elevators by rope drive. Owing to the occasional coincidence of the peak loads on the several machines, it was not an uncommon thing to have the engine overloaded several times a day; and to take care of these peaks it was necessary to maintain the full steam pressure constantly, whether any of the machines were temporarily out of use or not. A somewhat careful estimate of the power developed at the boilers for one thousand brick shows it would run from 75 to 82 h. p. hours.

In common with the usual experience of plants, this one went up in smoke; and in rebuilding it was decided to abandon the steam plant, equip with motors and purchase the current. With the actual cost this paper has nothing to do. In designing the equipment, we found that we had but little data on which to go, and it was determined finally to equip as follows:

Power Consumed with Electrical Installation.

The nine-foot dry pans were arranged so as to be driven by belt from 35 h. p. 60 cycle, 2 phase, 220 v., squirrel cage type, motors, running 560 r. p. m. The shaft of the

motors used was very heavy, and they were equipped, therefore, with an overhanging pulley, no outboard bearing being needed. These have now been in use for six months and are entirely satisfactory.

The elevators are driven by independent, $7\frac{1}{2}$ h. p., 60 cycle, 2 phase, 220 v., squirrel cage type motors. These motors are, of course, larger than the load seems to require; but they are belted directly to the elevator, no clutches being interposed, and, therefore, the starting torque is very heavy, having the dead elevator, which is about 50 feet in height, to start. There is an independent lead line for each dry pan and elevator motor.

The brick machine and pug mill are independent, but both are driven by the same motor. This is a 75 h. p., 60 cycle, 2 phase, 220 v., squirrel cage type, motor, running 570 r. p. m. In this motor the shaft is extended on each end and equipped with pulleys, one of which drives the brick machine and the other the pug mill. This has proven quite satisfactory as the pull on the bearings is largely balanced by this arrangement and there is no necessity for outboard bearings.

The clay from the screens is carried by a belt conveyor to the pug mill, which is driven by a 3 h. p. motor, using

times measured by itself. A second circuit carries the brick machine and pug mill motors, also the dust conveyor, D. C. generator, and machine shop motors, so that the reading of the meter on this circuit is more than the brick machine and pug mill proper. The light circuits are entirely independent.

The brick machine and pug mill motors, and the dry pan motors are all equipped with overload and low voltage release, a feature which seems quite valuable when making installations of this character.

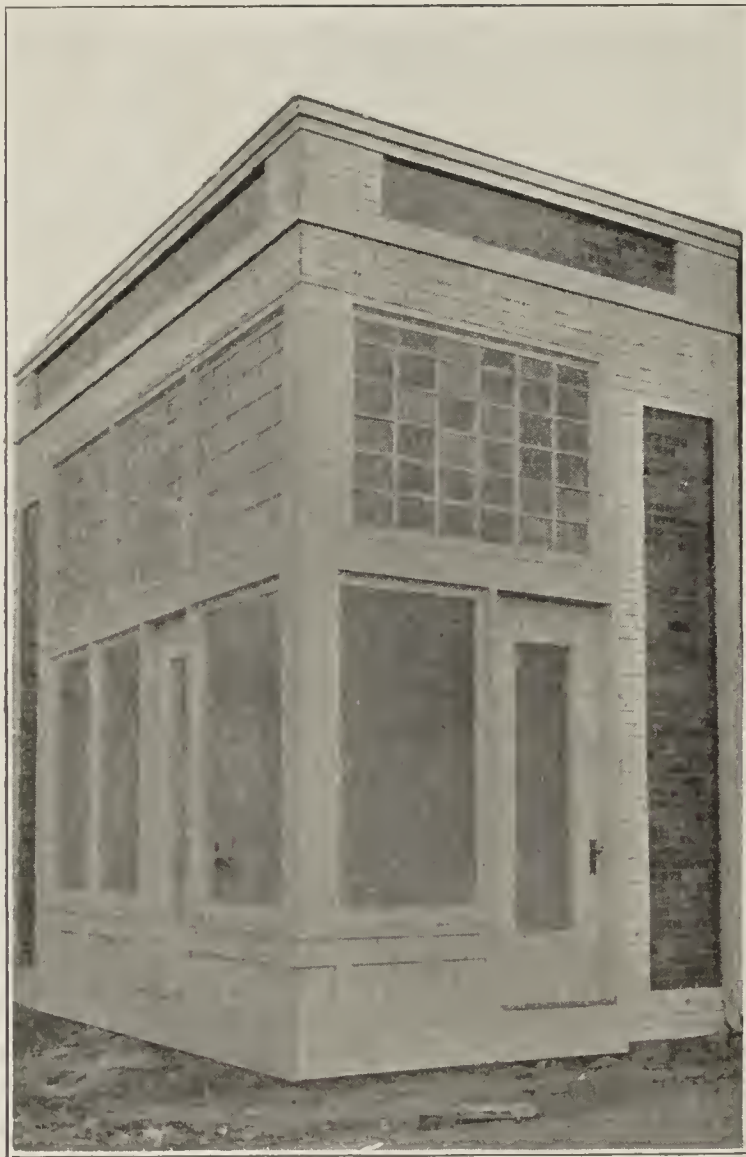
The average power consumption for the production of 1,620,700 brick was 30.4 k. w., or 40.75 h. p. hours, per M. brick. Something over one-half of this was consumed in grinding, the average power consumption per M. brick of the dry pans and elevators being 16.8 k. w. (22.52 h. p. hours), while that of the brick machine, pug mill, conveyor, pump, D. C. generator, and machine shop was 13.6 k. w. (18.23 h. p. hours) per M. brick. These average figures of power consumption per M. brick compare very favorably with the power necessarily provided by the steam plant, being less than 60 per cent of what the steam plant provided. This is due to a considerable degree to the fact that during every small shut-down of a machine it is necessary that the steam be kept up in the boilers and that the rest of the plant, including all shafting, be kept in operation, and in cases where but a small portion of the plant is in operation the entire dead load of engine, shafting, etc., must be carried without any return. When using electricity, with independent motor drives, the power consumption is cut off with the machine. These savings are, of course, obvious to anyone.

In our own case, we buy the current, and hence there is no necessity of providing for the peak load as would be the case if we were using steam or if we were generating our own current in any manner. It is not intended to suggest that where one is using electricity and generating his current he could reduce the size of the power plant as indicated by the difference of power consumption shown by the foregoing figures.

Variation in Cost of Power.

Few of us probably realize the real cost of our steam power, and even where electricity can be bought at a reasonable rate, most are inclined to think it much more expensive than their old steam plant. There is necessarily a great variation in the cost of power at various plants, due to ever-changing conditions; but it would seem safe to say that the power consumed in most stiff-mud brick plants really costs 75 cents to \$1.00 or more per M. bricks. The cost of current where it is bought also varies greatly, and an average rate would probably be a mere guess. With the power consumption indicated, 30.4 k. w., at a rate of 2 cents, which would probably be high for the amount of current used and the character of load, the cost of the power per M. brick would be 61 cents. What the current would cost if generated at the plant depends, of course, upon the amount of power needed and the character of the equipment. It is needless to say that in small plants there would not be much, if any, saving in generating their own current. These are features that must be determined in each particular case.

What is claimed to be the smallest "Class A" building in the world has just been completed at Los Angeles, California. The building occupies a triangular piece of ground, and is but one story in height. It has a frontage of 12.8 feet, a depth of 20.10 feet and is less than a foot wide at the rear. It is constructed of steel, and cream and olive-colored pressed brick. It was built by the Kyle Construction Co. and is owned by Mrs. C. Duburdure.



a belt drive. The pump for water supply is also driven by a 3 h. p. motor, and the D. C. generator, which develops the current for operating the drills in the clay mine, is driven by a 5 h. p. motor. A 3 h. p. motor is also used to drive the small machine shop in connection with the plant.

Switchboard Arranged In Two Circuits.

The switchboard is arranged in two circuits, one of which carries the dry pans and elevators; and thus the current consumed in the grinding and elevating is at all

How Cox Got Into the Game

BEING THE STORY OF A YOUNG
MAN WHO FELL HEIR TO A
RUN-DOWN CLAY PLANT

By Iverson C. Wells

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This is the second installment of a novellette which is written to give a suitable vehicle for certain views entertained by the author.

A few days later I took one of the brick to Larant, about forty miles away, and submitted it to an old burner whom Simpson had told me of. The color was a little unusual, according to this fellow's conclusion, but he was very much impressed with the texture and the quality.

When I returned home I told Simpson of the old burner's comment, and he seemed greatly pleased.

"To what use could a brick like this be placed?" I asked him, for I was in doubt as to what it really was worth on the market.

"For facing purposes," replied Simpson. "Its unusual color would make it a decided novelty on the market and its fine texture and its vitrifying qualities would give it double value from a selling viewpoint."

"How much should it sell for?" I asked.

Simpson thought a moment before answering.

"If it is properly introduced and pushed," he finally said, "I should say it would bring \$24 at least."

For two or three days I sat with one of those brick before me. Suppose it was all that young Simpson said for it, I asked myself.

I did not know whether the \$24 he spoke of meant \$24 per dozen, hundred or thousand, but I judged the figures were intended to convey the meaning that the brick had exceptional value.

I knew nothing of the manufacturing end. I did not even know at that time there was a difference between a common brick and a face brick, and the fact that a paving block required a different treatment or a different shale was Greek to me.

I struggled with the problem until finally I came to the conclusion that my proposition was to sell the shale bank. Having made up my mind that now was the accepted opportunity to rid myself of the old clay plant I began to figure a way and think of a buyer.

I had a vision of getting a good price for the property until the thought came to me that I had practically nothing to sell. My property line took in just exactly twelve feet of the old bluff to the north and about one hundred yards east and west. Certainly no one would want to buy the property with such a small holding. That stumped me for a moment until young Simpson's suggestion came to me to lease the Carpenter land.

The next morning I went over to see the administrator of the Carpenter estate. Within an hour I had a thirty-day option of all the land between the Cox estate and the river at \$100 an acre.

Once more packing up one of the brick in a small hand-bag I took an early morning train to Sorensville, where the Brown Bros. operated one of the largest plants in the country. It was my idea to see what they thought of the brick and ascertain if young Simpson was right. I showed



"Sawyer stood just outside the door and watched young Simpson until he disappeared down the road."

Henry Brown my brick. He looked at it suspiciously and at me even more so.

"Well, what about it?" he asked, very much on his guard.

"What do you think of it?"

He looked at the brick again, but did not answer. Presently he turned his eyes slowly on me.

"Well, what's your proposition?"

"I own three hundred acres of land underlaid with the shale that makes that brick. I want to sell the land," I answered quietly.

Brown looked at me rather doubtfully. Then he examined the brick more closely. Presently he looked up.

"Where is it?"

"At the old Cox brick and tile plant, Mauryville."

There was a look of doubt on his face.

"That played out years ago," he said.

"We've just uncovered a new shale pit," I smilingly replied, for his cautious manner amused me. Brown sat back in his chair and studied a point in the ceiling for a moment before he spoke again. Presently he wheeled about and said laconically:

"I'll go and take a look at it."

Brown returned with me to Mauryville on the afternoon train. He surveyed the surroundings and, convincing him-

self that what I had said was true, told me he would let me hear from him in a few days.

While waiting to hear from Brown I made a few inquiries about him and his brother William, and ascertained that they were occupying the same position that many a short-sighted brickmaker does. When they located their plant they did not consider the possibility of developing a very large business and the clay deposit was inadequate to the demands made on it. He was now facing an exhausted pit.

"I believe Brown Bros. will jump at your offer," said young Simpson when I told him what I had done. "In addition to the unlimited supply of this shale there is every inducement for a plant here. Take, for instance, your market. Cleveland is only eighty miles away and you have three trunk lines, two of which are to your central market. Then, one of these roads cuts right through your property, while the other skirts it on the west. The third is not so far away but what a spur could be laid easily."

"Would Cleveland use many of these brick, you think?" I asked.

"It's just a question of making enough to supply the demand," young Simpson replied, "if they are pushed a little."

BROWN BROS. SHOW TOO MUCH EAGERNESS

The second day following Henry Brown's visit to Maurville he telephoned for me to come over and meet his brother William and him that morning. The three of us went over the proposition for an hour or so. Finally Henry asked me point blank how much I wanted for the property.

Now, I had figured a little on the price I had expected to ask, of course. You see, I had an option on the Carpenter farm at \$100 an acre. To make a comfortable profit on the deal I estimated that \$125 was about right, expecting to shave that a little if necessary.

"One hundred and twenty-five," I replied.

"We'll take it," snapped Henry, as he turned to some papers on his desk and picked up a pen as if he was ready to make a contract then and there.

The suddenness with which he accepted my price surprised me. Perhaps I had made a mistake, I told myself. I recognized I couldn't withdraw my price and I sparred for time. Then a thought struck me.

"Of course, you understand this price only includes the land where the shale is. I wouldn't consider selling it without selling also the Cox Brick and Tile Plant."

Both brothers exchanged glances.

"How much do you want for that?" asked William.

"Ten thousand dollars," I replied.

"Why, that's out of the question!" exclaimed Henry. "The whole outfit wouldn't bring thirty cents as junk, and the land is useless."

I knew that, of course. I purposely named the price to get more time. These fellows were too eager to buy. I wanted to make a little further investigation before I sought a buyer. If these experienced brickmakers were so anxious to accept my terms, there must be more to it than I had reckoned.

"Those are my figures," I replied firmly, after a pause.

"Then we'll have to call off the deal," answered Henry, and he showed his disappointment very plainly.

"Very well," I replied and I arose to go.

"My brother is rather hasty, Mr. Cox," the other brother hastened to add. "Your terms are unreasonable and I

would like to let the matter rest a few days. Perhaps you will see your way clear to name a price more in keeping with the actual value."

"I don't believe there is any chance for me to change my price," I answered, "but I will consider the matter and let you hear from me later."

As I was taking my leave, William went to the door with me.

"I suppose there will be no objection giving us the first refusal?" he asked.

"No, not at all. You shall have the first call, if I sell."

I took the first train to Cleveland that night. The next morning I appeared at the office of one of the largest architects in the city.

"I have a brick I want to show you," I told him. "It is an unusual color and I am led to believe that you will be interested in it."

He took the sample I offered him. I could see by the expression on his face that the brick was of more than passing interest.

"Who makes this?" he asked, looking up presently.

"I do."

"I can use 200,000 of these in a job I am drawing plans for. It's a beauty! The color is striking!"

The next moment he had called two of his assistants into the office. Their comment convinced me that young Simpson was right when he said that the brick would make a hit.

"When can you make a delivery?" asked the architect, turning to me.

I was not prepared for this question. I merely had come to confirm young Simpson's assertion about the quality of the brick and to see if the Brown Bros. were getting off too cheap.

The architect apparently did not observe my hesitation, for he added:

"Can you get me 200,000 in 60 days?"

To this day I do not know what prompted me to say yes. I must have had a slight mental aberration for the time being, for I certainly had no more intention of taking up the manufacturing end than I had of trying to fly.

"What are they worth?"

"Twenty-four dollars," I answered glibly, recalling Simpson's figures.

"Good! Send them along. I can use a million of those in the next few weeks."

COX DECIDES TO GET INTO THE BRICK GAME

I left the architect's office with a vague idea that I had made several kinds of fools of myself.

I spent the rest of the afternoon in calling on some of the prominent architects and dealers, but I was careful not to make any more rash promises. When I took the train to Maurville that night I had the assurances that I could dispose of 1,000,000 brick if I wanted to make them.

As the train rolled homeward I began to revolve over in my mind the day's events. By the time I had reached the little town I had determined to go into the brick business on my own hook.

"I did not know the slightest thing about making brick," I admitted to myself, "but I do know I can sell them. If I can sell life insurance I can sell tacks. If I can sell tacks I can sell threshing machines, photographs or brick. It is just a question of getting acquainted with the subject a little and I decided to lose no time in getting acquainted.

It is easy to find some one that knows how to make brick, I argued with myself. Sawyer never got more than

\$25 a week in his life. Let Sawyer make the brick—I'll sell them.

The next morning I sent for Sawyer.

"I'm going to open up the plant," I told him as he took the chair I offered him.

He looked up in surprise, but I did not allow him an opportunity to give expression to that surprise in words if he had it in mind.

"Get a gang of men and clean up things a little. I've got to deliver 200,000 brick within the next sixty days."

"Two hundred thousand!"

Sawyer looked at me in amazement.

"Why, yes; can't we do it?"

"Not in ten years with that outfit!" was his emphatic reply. "It never made better than 10,000 any day in its life, and with the shape it's in now you couldn't make mud pies with it, let alone brick."

It did not take me more than fifteen minutes to discover that if I was to enter into the brick game I would have to get busy.

"What will be necessary in the way of equipment?"

Sawyer sat up in his chair and looked at me doubtfully. He must have seen the set to my jaw and knew I was in earnest, for he replied:

"Everything."

"But what is the least that can be gotten along with?"

Sawyer thought a few minutes before he replied.

"Well, if you intend to work that stuff over there on the bluff you'll have to get a carload of dynamite and an ore crusher to begin with. It's the iron business you're going into."

"Is there anything else?"

"Hell, yes. There isn't a thing down there in those old sheds that will do. You've got to get a dry pan or crusher before you turn a wheel. That old sausage machine is absolutely played out."

Sawyer pored over the catalogues of two or three machinery houses he had at his house and at my suggestion made out a list of the machinery and equipment that absolutely was necessary to start the wheels.

His list included these items: An auger machine, a cutting table, a dry pan, a pug mill, a screen, belting and shafting and a quantity of fire brick to patch up the two kilns.

"How much will that outfit come to?" I asked him as he handed me the list.

"Between \$5,000 and \$6,000."

Somehow or another I had gained the impression that a few hundred dollars would be all that was necessary to patch up the old plant and I so remarked to Sawyer.

"You ain't patching up nothing," he frankly admitted. "You're buying a new outfit."

When I looked at the pictures in the catalogue I concluded that probably the \$5,000 was all right.

Later that day I met young Simpson and told him I had finally decided to go into the brick business. He was overjoyed and I placed him in the seventh heaven of ecstasy when I assured him I would find a place for him in the yard.

"Sawyer will take charge of the place," I added, "and I'll speak to him about you."

"I am awfully glad to hear that, Mr. Cox," young Simpson said simply. "I certainly shall work hard for you."

We soon arranged terms and I told him he could consider himself on the payroll beginning with that day. As Simpson started home to break the news to his mother I



"Sawyer pored over the catalogues of two or three machinery houses."

called him back. There was a question I wanted to ask him.

"Say, Charlie," I began, "you say those brick should sell for \$24. Do you mean by the crate or the carload?"

He looked at me doubtfully for a moment and then his face was wreathed in smiles. I believe he would have laughed outright had he not seen how serious I was.

"You don't mean you have sold 200,000, with a tentative order for a million, and don't know how much you are getting for them?"

I must confess I showed a trace of embarrassment when I nodded my head.

"Mr. Cox, I was inclined to believe you were joking with me at first, but you look serious."

"I am serious."

"Brick usually are sold by the thousand, Mr. Cox."

I made a rapid mental calculation. The result staggered me. Two hundred thousand brick at \$24 per thousand was \$48,000!

When I came to, Simpson was going out the gate. I sat down and began to ponder.

* * * * *

The next morning Sawyer came over to discuss some details with me.

"Get ready to go to Pressville this afternoon," I told him before he stepped up on the porch. "We've got to do some hustling to get that plant going."

In the sleepless hours of the night I had figured out that brick at \$24 per thousand would put me in the millionaire class in a few months and I did not want to lose any time in attaining that distinctive position among my fellow-men.

Sawyer was disposed to discuss a lot of things, but I was restless with the fever of my new-born dream of affluence.

"Never mind those matters, Sawyer. Get ready to take the afternoon accommodation."

Sawyer made no reply and walked quietly across the road and disappeared through the door of the old plant. An hour later I saw young Simpson passing down the road on an errand and waved my hand. I soon learned I was not the only person watching the young man, for Sawyer at that moment came out of the plant and stood just outside the door. He watched young Simpson until he disappeared down the road.

The continuation of this story will be found in the May 15 issue.

EDITORIAL SECTION

Volume XLII. CHICAGO, MAY 1, 1913 Number 9

THE NEED OF A NEW ASSO- CIATION SHOWN IN NEGLECTED WORK.

The lack of an organized effort by the clay product manufacturers of the Nation to **SEIZE** the opportunities given the industry by the recent floods of Ohio, shows the **NEED** of a central clearing house or association where just such possibilities **CAN** be given proper attention.

Dayton has to be rebuilt and burned clay **SHOULD** be the material that is used.

Within twenty-four hours after the waters began to recede the lumber interests and the concrete interests were busy as bees planning to see that burned clay was **NOT** used.

More than a month has passed since the disaster and as far as can be seen at this distance there has been **NO** concerted effort to **INTEREST** the people of Dayton in burned clay and, aside from a few individual efforts, no one has shown any interest that would attract any special attention.

There are several most excellent associations in the clay product field and they are doing a great work and should be commended for what they have accomplished.

But these associations have their limitations.

The National Brick Manufacturers' Association concerns itself exclusively in the problems of manufacture. The National Paving Brick Manufacturers' Association is interested solely in pushing paving block. The American Face Brick Association and the Building Brick Association of America boost building brick and nothing else. The International Clay Products Bureau pushes sewer pipe.

With all the various organizations and associations there is none that is **UNSELFISH** enough in its purposes to take up and push any sort of aggressive campaign that would be to the **BENEFIT** of the clay product industry as a whole.

Despite the fact that there are more than 10,000 manufacturers of clay products in the United States, there is no organization or association or body of clay workers that can or would take up a proposition like Dayton and the flood and work it out persistently.

This is wrong. There should be some central organization. There should be an association formed along lines that are distinctly different from any of the existing associations.

With an organization like this a campaign, such as the conditions at Dayton warrant, could have been

started within a few hours. There would have been an organized effort to boost burned clay in all its various branches.

Meetings could have been arranged between the various business and civic bodies. Speakers could have been secured, engineers and architects interested in submitting plans for "A City Beautiful," and a hundred and one things done that should have been done and which was not done because there was no one to take the initiative.

This journal recently had another occasion to prove the necessity for just such an organization as outlined here when it harkened to the cry for help from the Washington State Clay Products Association in the Ford factory case. There was no association or organized band of workers to whom the Washington brickmakers could appeal to for help and this journal, if you remember, sent out a circular letter asking each one of our readers to write to the Ford Motors Co. and tell them **WHY** brick should be used instead of concrete at Seattle.

Suppose such an organization was in existence today, and a brickmaker in Ohio decided that it would be to his advantage to do a little local publicity. He would sit down and write the association and he would be encouraged in his work by helpful suggestions.

Suppose that all the clayworkers in Ohio decided that they wanted to conduct a special publicity campaign. The president of the Ohio association would get in touch with the director general of the major organization and a special campaign would be mapped out and even conducted, the Ohioans paying the bills, because the work was to benefit them exclusively.

Suppose the brickmakers of Chicago decided that they wanted to put their product into the proposed subways instead of permitting the concrete men to build them. If this association, backed by every brickmaker in the country, took up a campaign of education it would not take very long to convince the proper parties that brick was the right material, because the consulting engineer would come to Chicago and lay before city officials data and information that would show beyond doubt brick's superiority.

Suppose a tile maker out in Iowa wanted some special literature to distribute among the farmers of his section of the state, or a hollow block manufacturer wanted a pamphlet on silos and farm build-

ings, or a brickmaker down in Illinois wanted to combat a concrete contractor who was trying to put in **HIS** product instead of brick, would it not be convenient and profitable to be able to make known their wants to some central organization?

It is through the strength of a mighty organization such as is here proposed that burned clay can be pushed into **FIRST** place, and the sooner the clayworkers realize that a movement like this **IS NECESSARY**, the quicker prosperity will come to them.

This journal would like to have expressions from its readers on the subject. It is a problem that confronts every manufacturer, large or small. Shall we hear from you?

It is not enough to **SELL** a customer. Go still further and **SATISFY** him.

The egotist who believes he knows it **ALL** usually knows the **LEAST**. He who profits by the experience of the other fellow is more apt to be successful.

A manufacturer who cheapens his product to meet competition does himself and his industry an irreparable injury. Make the best brick you can. You will win in the long run.

Petty politics have no place in any movement that has as its object the welfare of a people. One selfish politician **WITHIN** the ranks can do more to retard a cause than the **ENTIRE** army of the enemy **ON THE BATTLEFIELD**.

The year 1913 is the twelve months that is to determine whether clay products are to rule the building and construction world. Whether we take the leadership or fall back into a place of secondary importance depends upon what we **DO**.

The clayworker who **FAILS** to **READ** his trade journal, who **SCORNS** the **TEXT BOOKS** printed for his benefit and who **IGNORES** the **OPPORTUNITY** to keep in touch with **MODERN** methods and processes is the one who complains the **MOST** that business is poor.

The sale of No. 1 paving block for **ONE** job in a town is more profitable to a manufacturer than the sale of No. 2 block for **HALF A DOZEN STREETS**. The first job will stand as a perpetual argument for more streets like it. The others will furnish **GOOD AMMUNITION** for the dollarway fellow.

Whatever you **WILL** to do you **CAN** do. **Man** has conquered the seas, the land and the air just because he **WILLED** it. Determination to quit has cured **MORE** drunkards than all the gold cures.

Clayworkers may put into use this same common sense law in their own business. Make up your **MIND** to have imperishable burned clay the world's material and it will be done.

A Cheerful Epitaph.

The following is an epitaph which appears on a tombstone over the remains of a woman in a Calcutta burying ground. The woman had been a dealer in Earthenware:

"Beneath this stone lies Catherine Gray,
Changed from a busy life to lifeless clay.
By earth and clay she got her pelf (money)
And now she is turned to earth herself.
Ye weeping friends let me advise,
Abate your grief, and dry your eyes,
For what avails a flood of tears?
Who knows, but in a run of years,
In some tall pitcher or broad pan,
She in her shop may be again."

—R. DOBSON.

1 Cavendish Street, Claremont, Cape Colony, S. A.

BRICK THE POPULAR CHOICE.

Other Materials Come, Have Their Day and Go—Brick Goes On For Ever.

"Other materials for building houses have not pushed brick out of the running," says the "Minneapolis Journal," which continuing, states: "From time immemorial brick has been a material utilized in the exterior walls of houses, and, although wood and concrete, stucco, and shingles have had their turns of popularity, brick is still staple."

Of the value of brick in permanent architecture a writer in the "Craftsman" says: "Today we are once more thinking about our homes, about the beauty of them, of the value of permanence, of their relation to the kind of life we are living; about the effect they will have upon our sons and daughters as they grow up to be real American men and women. The result is we are turning toward the country for the life of these sons and daughters, and we are building in the country homes that will outlive our own life, that will be monuments for generations to come of the awakening of the American people to the necessity of a beautiful, satisfying home life."

"The brick house has the great advantage of furnishing its own beautiful color spot in the landscape, and with the present method of varying the color in the brick in its manufacture, and with the mortar used in the natural tone and raked out between the brick, a picturesque effect which would only be possible in other architecture after very many years of weathering and mellowing."

"A house of brick, well thought out, may be made to harmonize most agreeably with almost any kind of landscape. It is most friendly in effect if adjusted to a sloping hillside; if it stands on flat ground it needs only the close proximity of an apple orchard. In the woods it relieves gloom and monotony, and on the seashore it is in beautiful contrast to the gray tones and the blue sweep of the water."

"From a practical point of view the brick house is an excellent investment. Well constructed at the start, it needs little repair and has the advantage of becoming more beautiful from year to year instead of increasingly shabby, as is the case with many wooden structures; generally the case where the houses are painted instead of being oiled. And if one stops to think of it, what an inartistic as well as unfriendly thing it is to paint a house over from time to time in quite a new and different color."

Canada Cries for Brick

MANUFACTURERS FAIL TO KEEP
PACE WITH THE DEMAND

By J. Keele

Member Toronto Engineering Society

Illustrated from Photographs

Canada has shown remarkable growth the past few years and an analysis of the building construction in leading cities of the Dominion show that the Canadians are building right, as burned clay enters largely into all the work. In a paper read before the Toronto Engineering Society, recently, Mr. Keele tells of the wealth of valuable clays to be found throughout the Provinces and which await development. Clay products have, in fact, been so much in demand in all parts of Canada that the Geological Survey has during the past four years carried on special investigations so as to get the information before the public as soon as possible. This report is a very exhaustive one and is worth while sending for by those interested in Canada. The Canadian Government undoubtedly will forward copies if application is made. The various clays found and the purpose for which they are suited are described by Mr. Keele in the article following:



THE demand for structural materials in all parts of Canada which are already developed, or in process of development, exceeds very largely the home production. Clay products, as a matter of course, have been the materials most urgently required, and large quantities are imported yearly from the United States and Great Britain.

The need for building material is greatest in the prairie provinces, where wood and stone suitable for this purpose are of rare occurrence. These provinces are now looking to the possibility of utilizing their clay and shale resources. Several manufacturers from Eastern Canada and the United States are either erecting clay working plants or prospecting for suitable deposits in those regions.

The clay manufacturers in many parts of the Eastern Provinces are branching into new and better methods of production, and making a greater range and higher class of wares than formerly. At this stage of the development of the country the raw materials most sought for by the clay worker are those which make up into structural wares, such as building, paving and fire bricks, sewer pipe, electrical conduits, fireproofing and field drain tile.

During the last four years the Geological Survey branch of the Department of Mines has carried on special investigations as to the clay and shale resources of Canada. As it was important to get this information before the public as quickly as possible, the examinations were confined principally to deposits, situated on or near existing lines of transportation. Later on it was proposed to extend the investigations to those outlying districts which are reasonably sure to be provided with

transportation in the future, which will bring any deposits found there into economic importance. A very brief review of our knowledge to date will be given here, and only with reference to the manufacture of the materials above mentioned.

Clay for Common Brick Plentiful.

Surface clays suitable for the manufacture of common brick occur in all the provinces.



Pressed Brick Plant of Calgary Brick Co., at Brickburn, Alta.

Many of the larger valleys in Eastern Canada are floored with extensive sheets of clay, the most notable being the great plain of the St. Lawrence in the province of Quebec, where clay is found up to 100 feet in thickness. Clay beds of smaller extent are also found at the higher levels up to 700 feet above the sea, where they occur chiefly as terraces, bordering streams. A very extensive sheet of clay, alto-

gether detached from the southerly areas, is found along the line of the National Transcontinental Railway in Northern Ontario and Quebec.

Surface clays occur rather widespread in the provinces of Manitoba, Saskatchewan, and Alberta, especially in the Red River and Saskatchewan valleys.

There are large deposits of surface clays suitable for brick making in British Columbia, particularly those of the Thompson River and Okanagan valleys in the interior, and of the Fraser River valley and the vicinity of Victoria on the Pacific coast. The surface clays are of recent origin, geologically. They are not consolidated and may be used directly as they are dug from the bank for brickmaking. They may come so close to the surface as to form the soil where crops are grown, or they may be covered with so much gravel or sand or swamps as to be inaccessible to the clay worker.

They have been laid down either in estuaries, like the

marine clays of the St. Lawrence or Fraser River valleys, or in large bodies of water ponded between ice fronts and land margins, like those of the clay belt in Northern Ontario and Quebec and the Manitoba clays, or in lakes entirely surrounded by land, or along the

Columbia, these being generally of Cretaceous age. A thick series of shales of the Tertiary age occurs at Sumas mountain, south of Mission Junction in the Pacific coast region. The latter excel all other shales so far found in Canada in their usefulness to clay worker



Chief center of the common brick industry in the Province of Quebec.
St. Jean Deschillons on the St. Lawrence River.

margins of rivers. They vary in structure from stratified thinly bedded clays, showing definite seasonal accretions, to massive or vertically jointed clays without any horizontal structure, seeming as if sedimentation were unceasing while the deposit was being laid down. The color of the raw clay is generally bluish-gray, but larger areas are of a red brown or dirty yellow. The plasticity is usually good. With the exception of a portion of the Ontario clays which are buff burning, the eastern clays burn to a red color. The Manitoba clays are mostly buff burning, while the majority of the clays further west are red burning. The clays that burn buff contain a high percentage of lime. The surface clays in general have low fusing points. They will not stand overfiring, so that they are not adapted to the manufacture of vitrified wares.

Their principal use is for common brick made by the soft mud process. Some of these clays, however, can be made into brick by the stiff mud or wire cut process, and into drain tile. They are also used occasionally for making terra cotta lumber, or porous hollow blocks, by the addition of sawdust to the raw clay.

The surface clays are mostly unsuited to the manufacture of facing brick made by the dry pressed process, as they either give a brick with a soft porous body, or the shrinkage is so uneven after firing that the brick are too variable in size in the kiln.

Most of the numerous beds of shale in the carboniferous system of Nova Scotia and New Brunswick are admirably adapted for the manufacture of a large range of clay products

In Quebec and Ontario, the Medina shale of Silurian age and the Utica-Lorraine and Medina shales of Ordovician age are employed for brickmaking both by the dry pressed and wet moulded processes. This is not true in any other section of Canada.

Beds of shale which may be utilized for brickmaking occur scattered through the mountain regions in British

found near Calgary, Lundbreck and at Entwistle, west of Edmonton, which are suitable for pavers. The best slow vitrifying shales which will make tough paving blocks, so far found, are those of Sumas mountain.

Fire Clays Found at Various Points.

Those clays which will stand in firing to the softening point to cone 27 (1,670° C.) are classed as fire clays, and bricks made from them are used in various industries where a high degree of refractoriness is called for. Fire clays occur in the Musquodoboit valley and at Shubena-



Dry press brick plant at Blairmore, Alta. Bank of cretaceous shale in background.

cadie on the Intercolonial railway line in Nova Scotia.

The fireclay beds in the Dirt Hills in southern Saskatchewan are of good workable thickness and fairly widespread. They are light gray, to white, highly plastic, and the most refractory clays at present known in Canada. They occur interbedded with impure shales, soft sandstone and lignites of Tertiary age.

With the exception of some beds of kaolin on the Missinabi River in Northern Ontario, which are probably refractory, these are all the fire clay localities at present known in Canada.

Clays or shales suitable for the manufacture of sewer pipe should be able to stand a fairly high temperature, at least cone 5 ($1,230^{\circ}$ C.) without softening. They should burn to a hard impervious body, and take good salt glaze. The localities already given for paving blocks apply also to sewer pipe, as the requirements for both these wares are somewhat similar. A sewer pipe body may also be made up by using a smaller proportion of refractory shale or clay mixed with a more fusible one. The refractory clay acting as a skeleton, or support to the fusible part, the latter serving to give denseness to the body.

The carboniferous shales of Nova Scotia and New Brunswick will supply the raw materials for sewer pipe and conduits for the eastern market. The cretaceous shales in Manitoba, the Dirt Hills clays in Saskatchewan, certain shales in Alberta, and the Sumas mountain shales in British Columbia will furnish the western raw materials.

Fireproofing should be made from shale which has good plasticity, and capable of standing more fire than ordinary surface clay, as they must be burned hard without deforming, and have a fairly high compressive strength. Most of the carboniferous shales of Nova Scotia and New Brunswick, the Medina shales of Quebec and Ontario, many of the tertiary and cretaceous shales and clays of the western provinces are suitable for this purpose.

Surface Clay Worked in All Provinces.

The surface clays are worked in all the provinces to supply local demands for common brick. So widespread



A Portion of the Plant of the National Brick Co., at Laprairie, Que.

are these clays, that brick made from them are only rarely transported for long distances from the place of manufacture. The smaller plants are simple in operation, there being only one brick machine, and the green brick are dried on the ground, or in open racks. There are no permanent kiln buildings, the clamp or scove kiln being generally set up for each burning. These plants operate

about six months in the year, the output varying from 500,000 to 3,000,000 bricks for this period.

A notable group of recently erected shale brick plants are those located at Laprairie and Delson Junction on the south side of the St. Lawrence River, fourteen to



Works of the Alberta Clay Products Co. at Medicine Hat., Alta.

eighteen miles from Montreal. There are three plants of the National Brick Co. and one of the St. Lawrence Brick and Terra Cotta Co. They produce stiff mud, tapestry, dry pressed and enamelled brick from the red burning shale of the Utica-Lorraine formations. The output of the combined plants is about 700,000 brick per day, and operations continue for about ten months in the year.

There are six shale brick plants in operation in the province of Alberta. These are located at Medicine Hat, Red Cliff, Brickburn near Calgary, Sandstone, Blairmore, and Edmonton. They make red brick only, except at Red Cliff, where a limited number of buff brick are produced from a special seam of clay shale. The Medicine Hat and Red Cliff plants burn with natural gas, the others all use either bituminous coal or lignite for fuel.

The plants at present under construction which will place brick on the market for the season of 1913, are located as follows: At Montmorency Falls, about six miles from the city of Quebec, to use the Lorraine shale. At Russell, Cooksville and Meaford in Ontario. Two new shale brick plants are being operated on the islands in the vicinity of Victoria, B. C., and shale brick plants are being erected in Calgary and Edmonton in the province of Alberta.

Paving brick are at present produced at only two points in Canada. One plant located at West Toronto and using Lorraine shale, which is mixed with a small proportion of surface clay, and one at Clayburn, using Tertiary shale of Sumas mountain.

A plant is being erected at Calgary, which will make this class of wares.

Fire brick and special shapes of refractory goods are made at the Standard Drain Pipe Co.'s works at St. Johns, Quebec, and at the works of the Montreal Fire Clay Co., but their clay is brought from the state of New Jersey in barges. The sewer pipe plants are located as a rule, in Ontario.

Turning Hills Into Dollars

BEING THE STORY OF HOW WORTH-
LESS HILLS BECAME VALUABLE

When the early settlers came to Illinois and began to locate in the vicinity of what is today known as the little city of Drake, they criticized Nature very severely for wasting so much of Illinois by throwing up what was then considered useless, towering hills. Acre after acre of what otherwise would make good farm land, lay idle and little did the pioneers dream that some day these same hills would be mined and the product coined into dollars.

For more than forty years these hills have proven veritable treasures, for it was discovered that they had an unlimited quantity of the finest quality clays. The potter, the brickmaker, the tilemaker and the terra cotta manufacturer have drawn thousands of tons of material from these hills, the refractories have found the clay particularly well adapted to their requirements. Sculptors and modelers have learned that its peculiar properties



made it of great value and the zinc manufacturers find it useful in their work.

It stands to reason, therefore, that with the value of these hills established, they no longer are permitted to remain idle. The Roodhouse Clay Products Co. bought the property and has developed a profitable business.

The mine, which is an open-cut proposition, is located on the Chicago & Alton railroad, about six miles west of the town of Roodhouse, a town in Greene Co., not far from Jacksonville, Ill. Before the days of the railroad in this region the clay was hauled across-country by wagons to the potteries at White Hall. After the coming of the railroad the clay was hauled from the pit to the cars by wagons and shipped for considerable distances. Later on a Broderick & Bascomb aerial tramway was installed and operated for about five years, after which a switch of the Chicago & Alton Railroad was built direct into the workings.

Through all of the different methods of operations, and despite the fact that some of them were of the very crudest, the clay from this pit has always been in demand for art pottery, common pottery, stoneware and terra cotta, and at the World's Fair in St. Louis in 1904 the potter's clay from this pit was awarded both the gold medal and the grand prize.

In addition to the potter's clay it has been found that there exist large and valuable deposits of fire clay. This fire clay is quite plastic and when taken from the mine without any weathering, will fuse at about 3150 F., and after proper weathering it is said to be even more re-

fractory. There is considerable demand for this clay from fire brick manufacturers, as well as from manufacturers of face brick.

The particularly interesting features in the operating line are to be found in the method of winning the material. The potter's clay is covered with a yellow drift clay ranging in depth from two to thirty feet. This is a red burning clay and has been used in considerable quantities in nearby plants, manufacturing drain tile, brick, etc. For removing this over-burden a seventy-ton Bucyrus steam shovel is used in conjunction with four-yard Western dump cars. This clay is piled on a regular dump with the intention of later use in the manufacture of the clay products for which it is most suitable.

After stripping off a considerable area of the potter's and fire clay amounting to approximately 25,000 to 30,000 tons, a shed 80 ft. wide and 225 ft. long was erected over this deposit and also over the railroad track so that the clay could be loaded into cars regardless of weather conditions. This feature has already proven its value, for with all the heavy rains and bad weather of the past winter and spring no handicap on the loading was experienced, and in addition there was no deterioration of the different clays due to the washing of one kind of material into another.

Another innovation was the method of drilling the clay for blasting. With the old style method of hand drilling



These two pictures were taken on the Roodhouse property at Drake, Ill. The upper picture shows method used in drilling for blasting. The lower picture shows the big shovel at work loading.

a hole six feet deep would be put down on an average of about one an hour. A shot of this kind would usually mix up the different clays and cause considerable work in separating the potter's from the fire clay. The method now in use consists of a Jeffrey Coal Auger operated by steam. This drill was mounted on a "home-made" frame built upon the truck of an old dump car. By using this apparatus a hole can be made horizontally into the clay six feet or more; the drill is taken out and set up for the next hole on an average of every five minutes. By using this method, together with small shots of dynamite exploded by battery, a great deal of time is saved. The clay lifted off is of a more uniform nature, and on account

of the small charges of explosive, practically no damage has been done to the shed.

Until recently the clay has been loaded by wheelbarrows into the cars, but a number of the old dump cars have been converted into automatic dumps, and the clay is now loaded into the small cars in the pit and hauled by the locomotive down to a track-hopper where it is automatically dumped into an inclined elevator which, in turn, spouts either direct into the cars after the fashion of loading grain or to the Williams Deck Sweeper Mill for grinding.

ERECTS MODERN PLANT IN NOVA SCOTIA.

Canadian Company Installs Third of Up-to-date Clay Manufactories.

The Nova Scotia Clay Works, of Halifax, N. S., is building another plant at Elmsdale, N. S. This plant will be one of the most up-to-date plants in the province. The entire construction throughout will be of the best, the buildings being all brick, with structural steel, and entirely fire-proof. The quality of the clay at Elmsdale is without doubt one of the finest clays in Canada, and the product as manufactured by this company has gained an excellent reputation. The new plant will be equipped with the most modern machinery and devices. The kiln is to be of the top coal fired continuous variety, with 50,000 daily capacity. This is the third up-to-date plant that the Nova Scotia Clay Company has built, and in each case the entire equipment was furnished by the American Clay Machinery Co., of Bucyrus, Ohio. The concern is a firm believer in the coal-fire continuous kiln as it has averaged 95 per cent No. 1 brick with this type of kiln.

The new plant at Elmsdale will have a capacity of 50,000 brick per day. The clay will be taken from the bank with a steam shovel and loaded into steel side dump clay cars. These cars will be drawn up an incline by a friction hoist to a point opposite the three wet grinding and mixing pans, where the clay will be thoroughly mixed and prepared. After being prepared the clay passes over conveyors and is discharged into a double shaft pugging and mixing mill. This mill is all mounted on a structural steel frame, which sets directly over the No. 65 "auger" brick machine. After the clay leaves the die it passes on to the automatic cutter and out on to the off-bearing belt, where the brick are taken off and placed on steel dryer cars. They are then taken into the 16-tunnel steam dryer. This dryer is fire-proof and thoroughly up to date. In addition to the brick making unit there will be a separate and independent unit for making tile and hollowware, and there will also be a sewer pipe press installed to take care of the big demand for sewer pipe. Work has started at Elmsdale and the plant is now under construction and will be rushed to completion as quickly as possible.

Canadian Rulings on Leasing of Land.

Interesting to the clay worker is the recent order-in-council emanating from Ottawa, Can., anent the leasing and administering of lands. Certain localities in the province of British Columbia have been included so as to cover the leasing of Dominion lands which have clay deposits. The lessees of a clay location must erect buildings on the land within two years of the date of such occupation, these buildings to be of more than \$10,000 in value. After the second year the lessee must manufacture not less than 100,000 brick or their equivalent.

William C. Varney, manager of the Chicago branch of the Hydraulic-Press Brick Co., states he is receiving more and more frequent calls from prospective home builders, as the direct result of the advertising campaign recently started in the interests of "Hy-tex" brick. He says that the callers

are not "thinking of building some time next year" but are live prospects, ready to place orders in the near future.

IOWA CONCERN USES ELECTRICITY.

Furnishes Power for City Factories as Well as For Own Clayworking Machines.

C. C. Miller, general manager of the firm of Miller & Sons, the well known brick and tile concern of Clermont, Iowa, was a conspicuous figure at the convention and clay show. He came here to meet the progressive men of the trade and look after the business interests of his company. He says business conditions in his section of the country are constantly improving and that the future looks exceedingly fine.

"In 1902 we purchased a small brick plant in Clermont, Iowa, which was producing good material," said Mr. Miller.

"We doubled its capacity every year, and seeing the water opportunities there, we purchased the Clermont mill with its water rights for the purpose of lighting Clermont and furnishing electric power to operate the brick plant, and in 1909, we put in a concrete dam, new water turbines, and a 300 K. M. generator capacity with a 300 H. P. steam auxiliary plant, to be used in case of emergency or at low water time.

"Then we built Clermont and Elgin for light and power and transmitted electric current to the brick plant and installed motors and in 1910 we rebuilt our brick plant, put in a ten-track dryer, new machinery, new kilns and we are now putting out about 500 cars of material per season.

"Our product finds a ready sale in our territory and we have no trouble in selling all we can make without a traveling salesman. We manufacture common brick, drain tile and building tile. We put up about 25 clay block silos in 1912.

"We also opened a gravel pit which is on our transmission line and put out 500 cars last season. We are furnishing electric power for operating the canning factory at Elgin, Ia., creameries, mills, etc., and still having power to spare. We purchased the West Union electric plant and are running same from our power plant. We have franchises for Ossian, Colmar and Hawkeye, which we will build this spring."

CLAY IMAGE PUZZLES SCIENTISTS.

Recent "Find" in Mexico May Reopen Discussion as to Discovery of America.

Enterprising scientists, exploring the ancient ruins of Mexico, recently, came across a small clay image that may possibly solve the enigma of the new world's beginning. The image was discovered by Professor Niven, and the form is that of a Chinaman with oblique eye slits, padded coat, flowing trousers and slippers. The image is about seven inches in length, and, according to Professor Niven, proves that the ancient people of Mexico were similar to the Mongol type. The age of the figure is difficult to determine without further data; circumstances, however, warrant the rough guess that about 5,000 years ago Chinese navigators crossed the Pacific in their primitive junks, and discovered America, thousands of years before Columbus was born. Settling there, they built a city, and in a grave of one of their number, many years after, a clay image of the man was buried with him. It is this clay image which has lain there through all the centuries and which has now been discovered, and the whole history of the New World may now for the first time be revealed.



How does your labor cost compare with 1911 and 1912? Are you getting as large and as good an output for the same money or is your cost higher, output considered, than it has been in the past?

If higher, you are confronting a condition—you must get a better price for your goods or make less money than you did last year or the year before. That is, you are confronting this condition unless you are finding a means of bringing the efficiency of your yard up to a point where it will offset the increase in labor cost. What are you doing to get that efficiency?

Are you sending your superintendent to other plants to see labor-saving devices that have been installed or efficiency methods that have been put in practice?

Are you encouraging him, beyond the mere admonition to keep down his costs, to install labor-saving devices of his own invention, designed especially to meet the conditions at your yard?

Are you meeting his suggestions of possible changes in men or methods with a welcoming smile or do you wet-blanket them with a dubious "Well, I don't know" air that curbs his enthusiasm.

Your superintendent is the man to whom you look for results, yet, if he is the right kind of man, he looks to you for many things you may be withholding from him.

Use By-Product of Cutting Table.

You may still use a hand cut-off and make ten brick per revolution, or have the latest improved spick and span high power "thirty-at-a-clip" cutting table. In either event you have a waste piece at the end of the cutting table farthest away from the brick machine. Sometimes this piece is only a half inch thick, again it is almost full-brick thickness.

If any appreciable proportion of those pieces can be made a reasonably uniform thickness, or, coming from the cut-off, be "sized up" by the off-bearers, and those that range between one and one and a quarter inches saved, you would have a very tidy addition to your income. Going a little further, it pays to rig a small repress and put these "splits" through. Strange as it may seem, these small brick, the same size, width and thickness as a regular brick, but half as thick, are worth double the price of full size brick at the factory. Used mostly for mantel work, they bring the retailer a good price, and if repressed and set in the kiln to flash both edge and flat side, the edge-set brick can be laid in the chimney breast in regular brick fashion (taking, however, twice as many splits as it would regular brick) and flat in the hearth, where the value of a full 8-inch by 4-inch brick-tile only 1 or 1¼ inches in thickness is readily apparent. This is a legitimate use of a "by-product," and like most "by-product" uses, will pay handsomely.

GET A SITUATION

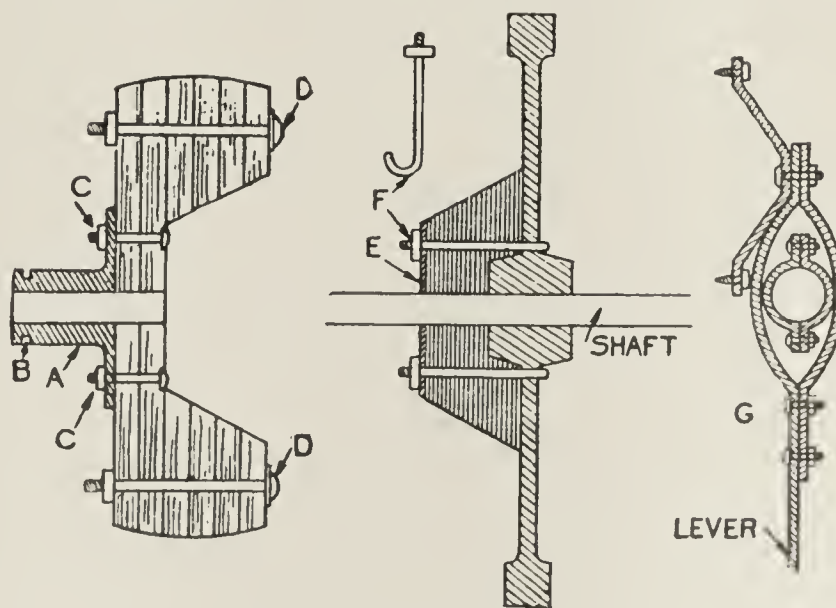
by advertising in the Classified advertising pages of "Brick and Clay Record"

How Does This Compare with the American Yard?

In a German brick yard with six million brick yearly capacity, equipped with two continuous kilns, there are employed the following number of men: The clay is hard shale. Six men are used in breaking loose the shale, six men for loading and two men for moving the cars. On the brick machinery there are used four men, one man on the elevator, one man for the transfer of cars, and eight boys for the handling of the brick on the drying racks. The kiln takes six men for setting and drawing, besides the two burners. With the superintendent, the time keeper and the labor of loading wagons and cars, there are employed all told sixty-three men. The capacity of the plant is about 20,000 brick per day.

Homemade Friction-Clutch Pulley.

A friction-clutch pulley can be constructed from material usually found about most shops. The one shown was made of parts described as follows: The piece A is a part of an old lawnmower wheel, which had the rim cut off and a groove, B, ½ in. wide and ⅜ in. deep, turned in the hub. The flange was drilled for four ⅜-in. carriage bolts, C, which hold the two first circular pieces of hardwood to the piece A. These pieces should be placed so that the grain of the wood will be crossed. The pulley is further built up of circular pieces or segments of wood to the desired thickness, always crossing the



Homemade Friction-Clutch Used on a Gasoline Engine to Start and Stop the Line Shaft.

grains in laying each layer. The subsequent layers are fastened with bolts D. The built-up part is then turned in a lathe in the form shown.

The cone part is built up of fiber and, when completed, should be of such size and shape as to fit the turned part in the pulley, the sloping surface being a trifle larger, so that the cone will grip the surface before it reaches the bottom of the hole. The fiber is clamped to the flywheel, or other wheel, with a metal disk, E, and bolts, F. A split collar and yoke, which fits into the groove B, was made as shown at G, and with it the pulley can be set into or thrown out of motion.—Popular Mechanics.

Kiln and Burner

Belief is current among clay product manufacturers in the United States, that if a continuous kiln now being experimented with by the Empire Porcelain Co., of Staffordshire, England, is a success for that class of clay burning, it might be so adjusted to suit the burning of rougher clay products, such as brick, sewer pipe, tiling and hollow building blocks. The kiln in which the ware is fired is a circular tunnel, having a continuous slot in the roof, through which hang 28 suspension bars, each bar carrying an iron basket, in which the ware is placed. The slot is covered over with a suitable cover, the lower edges of which are sealed by being immersed in sand grooves, and loss of heat is thereby prevented. The 28 suspension bars, carrying the iron baskets in which the ware is placed, pass upward through the slot in the roof of the tunnel, and are attached to an iron superstructure, which stands above the kiln.

This superstructure is built upon and carried by a central pillar, which revolves upon ball bearings. The whole weight of the superstructure, ware, and baskets being thus carried upon ball bearings, the driving power required to revolve the whole load is thereby reduced to minimum when fully working. The baskets of ware upon one side of the kiln balance the baskets of ware upon the other side. There is only one firing mouth, and this is placed upon one side of the kiln, and upon the opposite side is the charging door for placing in and removing the baskets of ware. The advantages claimed by the builders of the kiln are as follows:

1. The whole of the mechanism is easily accessible, the greater portion being visible on the outside.
2. There is no ironwork in the floor of the kiln, and the bottom can be heated to any extent that may be desired, the flues being carried under the floor of the kiln and up the sides.
3. The wear and tear of the tunnel and ironwork and the kiln generally is reduced to a low cost.
4. The economy in fuel is great, the cost of firing being little more than one-third the firing cost of the ordinary box kiln.
5. Ware required urgently can be passed through the kiln in nine hours.
6. There is no force used against the baskets. They are not pressed against each other, and hence greater economy in baskets and saving of wear of the floor of the kiln.
7. As the whole load is carried upon ball bearings, there is no weight whatever on the floor of the kiln.
8. The kiln will deal with the largest articles, such as ewers and basins.

Sometimes the formation of a white deposit on bricks in a kiln can be prevented by closing the damper of the kiln almost completely about half an hour before the kiln is ready to be finished. The firing is continued as usual, and a heavy smoky atmosphere is produced. An intense smell of burning sulphur is often produced at the same time, and the damper is kept down until this has disappeared. The damper is then opened, and the kiln finished in the usual manner. The object of this treatment is to decompose any soluble sulphate which may be the cause of the white deposit, the final firing helping their decomposition products to combine with the clay. With bad cases several alternate firings with the damper open and closed respectively may be necessary, but in each case the kiln should be finished with the damper open. This method is only useful for clays containing soluble "sul-

phates;" other soluble salts likely to be present are not so readily decomposed.

Some burners are troubled with underburned brick which they have replaced in a hotter part of the kiln and burned again as "burnovers." They are spoiled with a white or pinkish white scum which, in the hardest burned brick, is the color of sulphur. The scum is partly due to fresh brick which are not quite dry being placed near the burnovers in the second heating, and partly to the fact that the burnovers are subjected twice to the action of impurities in the coal. It is almost impossible, therefore, to avoid some scum being formed. Some makers have found that dipping the face of the burnovers in gruel made of flour and water before putting them back in the kiln is useful. This covers the face with a layer of flour-paste which eventually burns away and, in falling off, carries the scum with it. Some burners have also stopped scumming by laying brown paper around the burnovers. The paper burns away when the kiln is red and when all ordinary chances of forming scum are past. Let us know how you succeed.

According to an experienced kiln builder, the generally recognized rule is that the base area of a kiln should be so large that the total weight of the kiln when filled will not exceed one ton per square foot, and some builders never exceed a load of 18 cwt. per square foot. This comparatively light load is necessary because the settlement of a kiln must always be as little as possible, kilns being more sensitive in this respect than ordinary buildings because of the expansion and contraction they undergo in heating and cooling. It is therefore necessary to decide whether the ground on a particular site will safely bear the load mentioned, an ample allowance being made as a "factor of safety." It is however, impossible to decide the strength of a particular piece of ground without investigating the site.

The novice in firing continuous kilns is often puzzled as to the proper time to close the chamber dampers. As a matter of fact, the chamber damper should, as a rule, be closed as soon as possible after the damper in a new chamber has been opened. That is, when the burner wishes to fire another chamber, he opens the damper in the chamber next to the one in which the damper leading to the main flue or chimney is open, and closes the damper which was previously in use. As the two dampers are close together, there should be no appreciable time between opening one and closing the other. Of course, much depends on the construction of the kiln, but most burners consider it unwise to have more than two burners open at once, and one experienced burner we know of insists that one damper is sufficient. The practice of keeping several dampers open wastes the coal without securing results.

"Scum that appears on the ware during the burning," says Lovejoy, "is not a salt leached out from the interior of the ware and left on the surface by evaporation, but on the contrary is a coating deposited on the surface of the ware, and does not necessarily derive any of its elements from the ware. We may find it not only on the surface of the ware, but also upon the kiln walls, the kiln castings exposed to the kiln gases, and the sand facing of sand-molded brick. It is a trouble belonging entirely to the burning, and may occur even after the ware in the kiln is fairly dry, and the danger of the ordinary scum is passed."

Questions and Answers

Clinkers as a Binder.

Indiana.—In your issue of Feb. 1, answering a question by "Missouri," Mr. Ellis Lovejoy advises the trial of coarsely ground kiln clinkers for a binder. Does he mean that the kiln clinkers should go into the pug-mill in a coarse condition. If so, how coarse and in what proportion?

Relative to the use of coarsely ground kiln clinkers, Mr. Lovejoy had in mind that the kiln clinkers should be crushed to such size that they will not cause trouble in cutting the bricks. The crushed clinker, if screened through a No. 8 mesh screen, will be sufficiently coarse to serve as a binder and at the same time will give no trouble in the cutter.

Wants "Beefsteak" Effect.

Pennsylvania.—We have strong demand for "beefsteak effects" in red brick. By "beefsteak" we mean the red center and dark edges produced during some stage of the firing. Can someone advise as to the best method of producing these effects? Further, would the brick have to be faced in the kiln or set flat so that the face would be exposed to the flame?

The red centers with dark edges are produced by facing the bricks in the kiln and then burning with an intense but quick reducing kiln atmosphere. It is common practice to set the upper half of the kiln on flat to be flashed for browns and other dark flashed colors and to set the bottom of the kiln faced on edge. The reducing action necessary to flash the upper part of the kiln is sufficient to give the flashed or reduced effect on the sides of the bricks in the bottom of the kiln, but this reducing effect does not extend to the center of the faced bricks and in consequence the color of the center retains its natural red while the edges are dark from the reducing conditions.

Coal Required in Burning.

North Carolina.—If it is a fair question, how many pounds of coal (good grade soft coal testing 145,000 B. T. U.) should it require to burn one thousand brick in 30 ft. round kiln flues, tunnel and stack of proper capacities? Brick requires 2,300° F. and shrinks 8 per cent in burning. They are practically all hard set within 1 ft. of crown. Also which type of 3 furnaces would be most efficient in attaining the required heat with least amount of coal? Furnaces in question are the solid slanting grate, slanting grate bar and the level grate bar. The furnace is 2 ft. x 4 ft. with 1 ft. dead space at base of bag wall.

This correspondent has given more data than the Colorado correspondent, did in the April 15 issue, but as will be seen from our answer to the Colorado correspondent there are still some undetermined factors which make an accurate answer to the question impossible.

A temperature of 2,300° F. is about Cone 7 and we can only say that it is common practice through the Central States to burn 30 ft. kilns to temperatures of Cone 7 with 1,800 to 2,000 pounds of coal (about 14,000 B. T. U. value) per thousand bricks.

We have no doubt that this statement will be questioned in a good many cases, and very properly so, because it is impossible to determine all the conditions. For instance, if bricks are set on flat, instead of faced, we get fewer bricks in the kiln by 20 to 25 per cent, but do not use correspondingly less fuel. The large part of fuel used in the burning is required for the kiln conditions and not for the actual operations of burning and consequently if the kiln is only half full or the setting is of such character that only half the

possible capacity of the kiln is made use of the fuel consumption per thousand bricks will run very high. On the other hand if the setting is close, if the bricks are small, and if the clay will take heat rapidly, the fuel consumption will be decidedly less. Four drain tile weigh nearly the same as standard stiff mud bricks, namely, about 6 lbs. burned, but where we may burn a thousand bricks with 800 lbs. to 1,800 lbs. of coal we will use in the same kiln 1,600 lbs. to 2,400 lbs. of coal per thousand drain tile.

In regard to the value of the different types of furnaces, there is a wide diversity of opinion, and in our experience we have found no material saving of fuel in one type over the other. We believe that in the old fashioned level grate bar furnace it is possible to regulate the air supply and get a better and more uniform combustion than in the other types of furnaces, especially with the fuel which is dirty and clinkers badly.

Clay Haulage from Pit.

Ontario, Canada.—Can you tell me where I can find information in regards to hauling clay from pit to factory a distance of 800 feet or possibly 1,000 ft? How much could a horse pull on a level tramway per day? Could it pull enough for 60,000 common building brick? Would this distance be too long for a drum and cable haulage and what grade would be necessary to allow car to run back empty to pit if we used reversible engine? Any information will be appreciated on tramming or hauling of clay from pit to plant as to amount hauled in a day and grading of tramway such as would give horse advantage in pulling load.

The average speed of a horse walking is supposed to be from 2 to 2¼ miles per hour, or about 176 to 196 feet per minute. Taking the lowest figure of the two, and based upon a distance of 1,000 feet from clay pit to plant, a horse would require about 11½ minutes actual travel. Allowing 3½ minutes for delays at each end, about 15 minutes would be required for a round-trip, or an average of 4 trips per hour.

Upon a basis of 60,000 brick, of an average weight of 4½ lbs. each, the daily capacity required would be about 135 tons per day, or 15 tons per hour, estimated upon a 9-hour day.

From the above, it can be seen that it would be necessary to carry 7,500 lbs. of clay per trip, which would be two 1½-yd. cars, or three 1-yd. cars. The weight of these cars loaded would probably amount to at least 10,000 lbs., or 5 tons.

We would say that the rolling friction for industrial cars as used for this work, would be about 40 lbs. per ton. A 5-ton load on level track would, therefore, require a pull of approximately 200 lbs. The tractive power of the ordinary horse would average from 100 to 125 lbs. By having a down-grade from pit to plant, of 1 to 1½ per cent, it might be possible for a horse to do this work, but we doubt very much if it would be at all satisfactory, especially in bad weather.

By far, the most practical and economical arrangement would be to install a surface haulage system, in which the cars are pulled one or both ways, by wire rope. In the event the grade from plant to pit could be made sufficient to return empty cars by gravity, only single rope and hoisting drum would be required. If, on the other hand, the grade is not sufficient to return the empty cars by gravity, the tail-rope system would have to be used, whereby the empty cars would be returned by a small cable or tail rope. Just what

grade would be needed to return the empty cars by gravity would vary according to the type of bearings used on the cars, size of truck wheels, and condition of track. For data on this point, we would suggest that you write manufacturers.

Whether the aerial tramways such as are manufactured by one of our advertisers will meet your requirements, depends entirely upon local conditions. With an aerial tramway economical results can only be obtained where the clay is brought to a central loading station for loading into tramway buckets. With a two-bucket or jig-back system with power-drive located at loading station, but one attendant would be required for the entire operation of the tramway. This man would be located at the loading station, and control the filling of buckets as well as the power and speed of line.

Wants to Know Best Dryer.

Texas.—We are planning the erection of a common brick plant, with a capacity of sixty to eighty thousand per day. What kind of a dryer would you advise us to install?

It is not the policy of this journal to advise as to the selection of dryers or machines. All the well-known dryers have their good points and few can justly be criticised. We have referred our correspondent to such manufacturers as are known to manufacture reliable dryers.

"Scoria" Bricks.

New York.—The Consulate General of the Netherlands in New York City wants names of companies making what are known in England as "scoria bricks." These brick are made from the residue of blast furnaces and are used for street paving.

If any of our readers can give the desired information we shall be pleased to hear from them.

Sand for Glass Making.

Wisconsin.—We are told we have the right kind of sand for making glass, but as we know nothing of the process of manufacture, we would be glad to get a book on the subject and also names of manufacturers of glass-making machinery.

The glass making business is entirely out of our line, so that we have no literature on the subject. We suggest that you write editor of "Pottery and Glass," 395 Fifth Ave., N. Y.

Registered Trademarks.

Missouri.—What must I do to secure patent office registration on a name I intend to apply to burned clay ware? What is the fee, if any?

You must first establish an actual use of the word, applied to the goods (preferably by being stamped into the green clay) and by using goods so marked in interstate or international commerce. It is well to send samples to some Canadian dealer, giving him a quotation and offering to send him a quantity of samples if interested. This constitutes technical international commerce. A similar correspondence, accompanied by marked samples, sent to a dealer in some state other than that in which your factory is located, is, technically, interstate commerce. If impossible to stamp the name in the goods, have a label printed, showing plainly the word you want to register, and the exact lettering you want to use and affix it to the goods as well as to the box containing the samples.

That done, the papers must be drawn up by a lawyer, as the patent office is inclined to be very technical. The total cost, including necessary drawings, will be about \$40, unless some objection is made to the registration.

Jackson Loader.

Ohio. Wants to know where the Jackson Loader used in handling clay is manufactured.

We refer this correspondent to our readers. Can anyone give him the desired information?

Wants to Make Magnesite Brick.

Scotland.—I should be pleased if you would suggest a method to manufacture magnesite brick from calcined magnesite and how to manufacture chrome brick.

The question asked is too big to answer in any short article. Any one who should attempt it would simply



Of all the special trains and excursion parties that came to Chicago during the recent Clay Show none attracted more attention than the "American Clay Special" from Bucyrus, Ohio. This train brought nearly two score of employes from the American Clay Machinery Co.'s factory solely for the purpose of showing them the result of their co-operative labors, for, as is generally known, President R. C. Penfield of the Clay Products Exposition Co., also is the active head of the American Clay Machinery Co., and has depended on his executive heads for much of the great work accomplished. The special train brought the visitors to Chicago and took them back to Bucyrus.

be laughed at by those who know the difficulties of the manufacture of magnesite and chrome bricks.

Bricks Check After Pressing.

Alberta.—We have a Berg dry press and manufacture high-grade face brick, but are having trouble with checking of brick before they are burned. We would like to overcome this, as it makes No. 2 brick out of a lot of otherwise No. 1. We have an overburden of thirty feet, so we mine our shale and, working it direct from the mine, have little chance to weather it. We find the brick check less when the clay is run damp and think it would be better if the clay were ground a little coarser. We are using a piano-wire screen, No. 24 wire, nine wires to the inch, and we do not want to run the clay coarser, as it would not give us as smooth a brick nor such well defined edges.

The trouble probably lies in the air holes in the top of your press being clogged up or in your running too fast. In either case, the air that is mixed with the clay when it enters the press has too little chance to escape in pressing and, as a consequence, compresses with the clay. It expands after the bricks leave the press, seeking an outlet through the face of the brick, checking them as it makes its exit. Having looked at the air holes, try running your press a little slower and note the result.

Grate Bars or No Grate Bars?

Rhode Island.—What is the best way to burn coal—with or without grate bars?

This has been a much-discussed question for years. There are advocates of both systems and each side is equally positive it is right. The plan of burning without grates has some difficulties in that it means clinkers and is hard on the men. We would like our readers to discuss this subject, believing that the actual experiences of practical men will prove valuable.

Early Egyptians Made Porcelain.

Paterson, N. J.—Has it ever been established whether a veritable porcelain was made by the ancient Egyptians, the term including products which are compact and translucent?

Fragments of a funerary statuette coming from Saggarah, which an archaeologist unearthed and gave to the Académie des Sciences, is pronounced to be undoubtedly of porcelain. The hieroglyphics leave no doubt of its fabrication in Egypt. The paste is translucent and of a pale blue color.

Wants Tests on Clay.

Wisconsin.—Can you inform me of parties who can make examination of properties, with a view of finding if they are adapted for clay brick making? I have been an interested reader of your excellent magazine for some time, and while not a brick manufacturer, I am very much enthused over your campaigns for organization. I am enclosing stamped envelope and trust that I may hear from you with the name of some reliable party that makes these examinations.

We suggest that you send a small sample of your clay to any brick machine manufacturer who will make tests of sufficient thoroughness to satisfy you as to the quality of the material and without charge. The various state universities where they have ceramic departments, such as Illinois, Ohio, Iowa, New York, etc., make these tests, but charge a fee of from \$10 upwards in accordance to the amount of work and time required. In addition to these there are several engineering experts who make tests such as are asked for and the addresses of these may be found in our advertising pages.

Dinas Brick.

Portsmouth.—We often hear of the original silica brick as being "Dinas" brick. Why?

The word "Dinas" comes from the rock in Wales from which it was and is still made.

Brick in Sewer Construction.

Indiana.—I want to know if you can give me any information or if you have any book that would inform me any on the building of brick sewers, in regard to excavating, the amount of sand and cement it requires to lay the brick and the labor for brick mason and tender. We are figuring on sewer here. It will either be concrete or brick. The cheapest bidder gets it and I am going to put in a bid for brick.

We regret to say that we have no book dealing with the building of brick sewers. We, however, issued in our Jan. 1st number quite an interesting article entitled "Building of Brick Trunk Sewers," by Owen B. McGinnis. In our Nov. 15th issue we published a short article telling of the use of segment block for the building of sewers. We believe that if you will get in communication with the International Clay Product Publicity Bureau, Kansas City, Mo., of which George H. Tefft is secretary, you could secure some valuable information. If, however, you wish to get up some arguments against the use of concrete, in many of our past issues for the last two or three years you will find a number of articles of interest. We also get out a book entitled "Life of Portland Cement," copy of which we have mailed the correspondent. We might add that we have under course of preparation a special pamphlet on concrete failures.

Seeger Cones and Lantern Slides.

Arizona.—We would like very much to get in touch with a firm that handles the Seeger Cone. Would you advise us of a firm that does so? Also would like to find out if could secure some ads to run at the moving picture show? Are these a good means of advertising and is there any firm that handles these for any brick association?

(1.) Our advertising pages should supply you with the necessary information. (2.) Any slide manufacturer can furnish the advertising slides and an inquiry of the manager of your local picture shows will put you in touch with the right persons. Why not make your own slides? The glass comes already prepared with a special coating or a film of collodium may be poured on a piece of common window glass cut to the required size. When this is dry one can write, print or paint lettering or designs thereon. (3.) Any sort of publicity is worth while and the picture slides would be of material aid to a local newspaper advertising campaign. (4.) We know of no association that has slides of this nature, but probably your inquiry here will be seen by someone who can help you.

Bricks Rub in Transit.

Indiana.—How can we prevent our brick being rubbed and defaced in transit? We load the cars carefully, brick face up and use plenty of straw. Our brick are fairly vitreous and have good, hard faces. Yet they do not seem to stand the racket when submitted to a long railroad trip.

Try loading the cars with two courses lengthwise to the width of the car, at alternate ends of the car, letting the layer of brick run out in the ordinary way—that is, the long way of the brick to the long way of the car. This will give a bond of about three inches, which is enough to overcome the swaying of the load and consequent grinding of the straw packing. The damage to the brick does not begin until the protection afforded by the straw has been reduced by the jarring of the brick.



The paving brick interests of Illinois are urging the passage of a bill which has been introduced at Springfield, Ill., providing for the establishment of a state highway department, the officers of which shall be appointed by the Governor and consist of a state highway commissioner, a chief state highway engineer and an assistant state highway engineer, to serve six years from March 1, 1914. It is to have general supervision of highways and bridges which are constructed, improved or maintained in whole or in part by the aid of state moneys. If the bill becomes a law it will terminate the present state highway commission.

It provides for state aid roads—that is, all roads or bridges constructed, repaired or improved at the joint expense of the state and any county or counties within the state and exempts all roads or parts of roads that lie within the corporate limits of any city or village. Town and district road officers are provided for, to be elected at the annual town meeting next following the passage of the law, by all counties under township organization. In counties not under township organization, the election shall take place on the first Tuesday in April following the passage of the act. These officers shall serve three years.

The state highway commissioner is to prepare plans, specifications and estimates for the repair and improvement of highways or approve those prepared by county superintendents and highway commissioners in towns and road districts, and where bids are taken, if the estimates run higher than the estimates of the state highway department, the work will be done by the state.

All improvements are to be submitted to the authorities in counties adjoining the counties in which the roads to be improved or repaired are situated, and maps showing connecting roads in adjoining counties are to be furnished and improvements made in the connecting highways, so providing for a continuous system of good roads built entirely or partly by state money and maintained by the state without any further expense to the county.

If in the judgment of the state highway commissioner it becomes necessary to relocate the routes as selected by the county authorities, he will notify the respective county boards and then give hearings to committees selected by them. He, however, will have the final decision in these matters.

Steam and electric railroad companies, telephone and telegraph companies and companies using pipe lines shall not have the right to locate or construct their roads, place their poles or wires and lay their pipes upon or along state aided roads without the consent of the county board of the county in which it is proposed to place or locate the same, but such consent shall not be given for a period to exceed twenty years and will not be effective until approved by the state highway commissioner.

Bridges and other improvements are governed by the same provisions, with the exception that the method of raising funds for this purpose differs somewhat from the manner of creating a fund for highway construction and repairs.

Revenue for highway purposes is to be raised by a poll tax levied on all able-bodied men, residents of the state, but not residing within the limits of cities and incorporated villages

and by a general tax levy, the amount of which is to be determined by the estimates of the amounts required for the proper construction, maintenance and repair of roads and bridges in the various towns or road districts.

"Rules of the Road" are established, providing against fast driving over bridges, destroying guide boards, depositing weeds and garbage in highways, intoxicated drivers, itinerant camping, lamps on vehicles, proximity of steam engines to horse-driven vehicles and forbidding persons in charge of steam engines to blow whistles when the engines are upon the public highways.

The width of tires is regulated and traction engines must be equipped with extra tires, so that the wheels will present smooth surfaces to the roadbed.

All fines and penalties recovered under the provisions of the act shall be paid over to the state treasurer, to become a part of the state road and bridge fund.

Various acts, dating back to 1883, are repealed and the new law places control of all state highways and bridges, as well as all state aid roads, in the hands of the state highway commissioner. His salary is to be \$5,000 per annum.

General Trade Gossip and News

Whatcom avenue, Seattle, Wash., which parallels the water front, is being paved with Denny-Renton Clay & Coal Co. 10-pound paving block. This street cares for all the traffic passing to and from the docks, warehouses and manufacturing establishments in the manufacturing end of the city.

The Pennsylvania Ry. Co. uses large quantities of brick annually. It makes almost all its depot platforms of paving brick.

The contract awarded last fall by the county commissioners of King county, Wash., to T. Ryan & Co. for paving three miles of county highway is just about completed. This paving is being laid between Kent and Auburn and forms part of the Pacific highway. Denny-Renton Clay & Coal Co.'s paving brick are being used in the work.

While recent improvements bespeak a large volume of business for Pennsylvania face brick manufacturers, the paving brick and paving block manufacturer must not be overlooked. There is to be a large amount of highway improvement done in Pennsylvania this summer, and in western Pennsylvania territory the bulk of the road work will be constructed of brick and paving block. Plans for the improvement of many roads have been completed by the state highway department.

Early in March city engineer Fred Thomas and the street committee of the council of Farrell, Pa., went to Sharon, Pa., where half a day was spent in the inspection of the plant of the Sharon Clay Products Co. As Farrell plans to do a lot of street paving this season, it is likely that the Sharon Company will secure the business.

King county, Wash., of which Seattle is the county seat, has just finished six miles of brick paved country road between Seattle and Tacoma. The paving brick were furnished

(Continued on Page 764)

Democrats Lower Tariff on Brick

POTTERY PLANTS OBJECT TO CUT AND STORM CONGRESS WITH APPEAL

The Democratic tariff bill, reported to the National House of Representatives by Chairman Underwood of the Ways and Means Committee, contains the following schedules of interest to the brick and clay industries:

"Fire brick, magnesite brick, chrome brick, and brick not specially provided for in this section, not glazed, enameled, painted, vitrified, ornamented, or decorated in any manner, 10 per centum ad valorem; if glazed, enameled, painted, vitrified, ornamented, or decorated in any manner, and bath brick, 15 per centum ad valorem.

"Tiles, plain unglazed, one color, exceeding two square inches in size, one and one-half cents per square foot; glazed, ornamented, hand-painted, enameled, vitrified, semi-vitrified, decorated, encaustic, ceramic mosaic, flint, spar, embossed, gold decorated, grooved and corrugated, and all other earthenware tiles and tiling, except pill tiles and so-called quarries or quarry tiles, 5 cents per square foot; so-called quarries or quarry tiles, 20 per centum ad valorem; mantels, friezes, and articles of every description or parts thereof, composed wholly or in chief value of earthenware tiles or tiling, except pill tiles, 30 per centum ad valorem.

"Roman, Portland, and other hydraulic cement, 5 per centum ad valorem.

"Plaster rock or gypsum, crude, ground or calcined, pearl hardening for paper makers' use, Keene's cement, or other cement of which gypsum is the component material of chief value, and cements not specially provided for in this section, 10 per centum ad valorem.

"Pumice stone, unmanufactured, 5 per centum ad valorem; wholly or partially manufactured, 1/6 cent per pound; manufactures of pumice stone, or of which pumice stone is the component material of chief value, not specially provided for in this section, 25 per centum ad valorem.

"Clays or earths, unwrought or unmanufactured, not specially provided for in this section, 50 cents per ton; wrought or manufactured, not specially provided for in this section, \$1 per ton; china clay or kaolin, \$1.25 per ton; fuller's earth, unwrought and unmanufactured, 75 cents per ton; wrought or manufactured, \$1.50 per ton; fluorspar, \$1.50 per ton; limestone-rock asphalt, asphaltum, and bitumen, 50 cents per ton; provided, that the weight of the casks or other containers shall be included in the dutiable weight.

"Mica and manufacturers of mica, or of which mica is the component material of chief value, 30 per centum ad valorem; ground mica, 15 per centum ad valorem.

"Common yellow, brown, or gray earthenware made of natural unwashed and unmixed clay; plain or embossed, common salt-glazed stoneware; stoneware and earthenware crucibles; all the foregoing, not ornamented, incised, or decorated in any manner, 15 per centum ad valorem; if ornamented, incised, or decorated in any manner and manufactures wholly or in chief value of such ware, 20 per centum ad valorem; Rockingham earthenware, 30 per centum ad valorem.

"Earthenware and crockery ware composed of a non-

vitrified absorbent body, including white granite and semi-porcelain earthenware, and cream-colored ware, and stoneware, including clock cases with or without movements; pill tiles, plaques, ornaments, toys, charms, vases, statues, statuettes, mugs, cups, steins, lamps, and all other articles composed wholly or in chief value of such ware; if plain white, plain yellow, plain brown, plain red, or plain black, not painted, colored, tinted, stained, enameled, gilded, printed, ornamented or decorated in any manner, and manufactures in chief value of such ware not specially provided for in this section, 35 per centum ad valorem; if painted, colored, tinted, stained, enameled, gilded, printed, or ornamented or decorated in any manner, and manufactures in chief value of such ware not specially provided for in this section, 40 per centum ad valorem."

Refractories Manufacturers' Association Elects Officers.

Following out plans talked over at Chicago during the recent clay association conventions, manufacturers of refractory materials met in the Fort Pitt Hotel at Pittsburgh, Pa., April 22, and formed a permanent organization which will hereafter be known as the Refractories Manufacturers' Association. Chief officers elected were: President, H. D. Savage, of the Ashland Fire Brick Co., of Ashland, Ky., and secretary, John H. Cavender, of the American Refractories Co., of Chicago.

The object of the new association is to promote closer relations between the manufacturers, dealers and consumers and also to improve in every way possible, the product of the manufacturers.

STATEMENT.

The following statement is a copy of the one required by the Government for all publications to make under the recent enactment of Congress. The law further requires that the statement shall be printed in the newspaper, magazine or other periodical making the same.

COPY.

Statement of the ownership, management, circulation, etc., of "Brick and Clay Record," published semi-monthly at Chicago, Ill., required by the Act of August 24, 1912.

Managing Editor, Iverson C. Wells, 4435 Clifton Ave., Chicago, Ill.

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Publishers, Kenfield-Leach Co., Chicago, Ill.

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F. S. Kenfield, 1623 E. 51st St., Chicago, Ill.

H. H. Rosenberg, 206 E. 44th St., Chicago, Ill.

C. L. Rorick, Chicago.

L. W. James, Chicago.

Sherman Leach, Chicago.

Known bondholders, mortgagees, and other security holders, holding 1 per cent or more of total amount of bonds, mortgages, or other securities:

None.

(Signed) C. L. RORICK,
Business Manager.

Sworn to and subscribed before me this 5th day of April, 1913.

F. J. SAUER,
Notary Public.

(SEAL)

Commission expires Sept. 17, 1916.

Monthly Tablet

Ancient Order of Chaldeans

Issued Under Authority of
The Supreme Temple
Chicago

Officers of the Supreme Temple

Supreme Venerable Nebo	W. D. GATES
Supreme Learned Fo	WM. SCHLAKE
Supreme Exalted Philosopher	F. W. LUCKE
Supreme Keeper of Tablets	IVERSON C. WELLS
Supreme Keeper of Shekels	L. D. BINYON
Supreme Chief of Guards	W. J. GILBERT

Supreme Council of High Priests—Charles B. VerNooy, Supreme High Priest, Ka., Louis D. Binyon, H. G. Bowstead, E. K. Cormack, R. M. Combs, James A. Hogan, Herman L. Matz, C. L. Rorick, H. H. Rosenberg, William P. Varney, Iverson C. Wells and F. G. White.

(NOTE: Address all communications to Iverson C. Wells, Supreme Keeper of Tablets, 445 Plymouth Court, Chicago)

Membership cards were mailed within the past week to all Chaldeans, but several have been returned because of incorrect addresses. Below is the list of members according to the records of the Supreme Keeper of Tablets, and it is very likely in the rush of the last few hours on the day of the institution of the Order that several mistakes were made or that some names were lost. Those who paid their adoption fee but whose names are not here shown will confer a favor by writing to the S. K. T. at the earliest convenience, stating to whom paid or giving date that may aid in establishing identification. The list follows:

SACRED COLLEGE OF ANCIENTS.

The first one hundred applicants for adoption into the Ancient Order of Chaldeans, according to the constitution and by-laws, shall be designated as the "Sacred College of Ancients." Their title shall be permanent and only death or expulsion for cause shall terminate their connection with this body. The college has been charged with the custody of the history and archaeological lore of the Chaldeans. The members of this college are:

Aulman, L., Des Moines, Ia.
Aylesworth, A. W., Canton, O.

Bach, Henry C., Chicago.
Bennett, R. E., Wellington, O.

Berg, John, Toronto, Canada.
Berry, George O., Columbus, Ga.

Biechler, E. G., Chicago.
Binyon, Louis D., Chicago.
Blair, W. P., Cleveland, O.

Bleininger, A. V., Pittsburgh, Pa.

Bloomfield, C. A., Metuchen, N. J.

Bowstead, H. G., Chicago.
Brady, F. M., Cleveland, O.

Brown, Richard P., Philadelphia, Pa.

Burridge, Charles, Tecumseh, Mich.

Clippert, George H., Detroit, Mich.

Combs, Roger M., Chicago.
Cormack, E. K., Chicago.

Cuthbert, T. P., Pittsburgh, Pa.

Denison, W. C., Cleveland, O.

Dickey, W. S., Kansas City, Mo.

Dolben, J. A., Boston, Mass.

Donohue, Jr., John H., St. Paul, Minn.

Dumbleton, W. B., Montezuma, Ind.

Dunwoody, W. E., Macon, Ga.

Dunn, F. B., Conneaut, O.
Durbine, W. N., Anderson, Ind.

Duty, Spencer, Cleveland, O.
Dyer, C. C., Greenfield, Mass.

Eastman, Fred W., Tacoma, Wash.

Fate, H. H., Plymouth, Ohio.
Fiedler, George A., Atlanta, Ga.

Flood, Harry J., Chicago.
Frink, R. L., Lancaster, O.

Gangewere, Warren, Chattanooga, Tenn.

Gates, W. D., Chicago.
Gilbert, W. J., Chicago.

Griffiss, Warren, Baltimore, Md.

Hensley, J. W., Indianapolis, Ind.

Hearn, P. W., Webster City, Ia.

Hoagland, W. H., Columbus, O.

Hogan, J. A., Chicago.
*Holmes, Harry B., Chicago, Died March 29, 1913.

Hoshour, Charles A., Oklahoma City, Okla.

Hoskins, James M., Terre Haute, Ind.

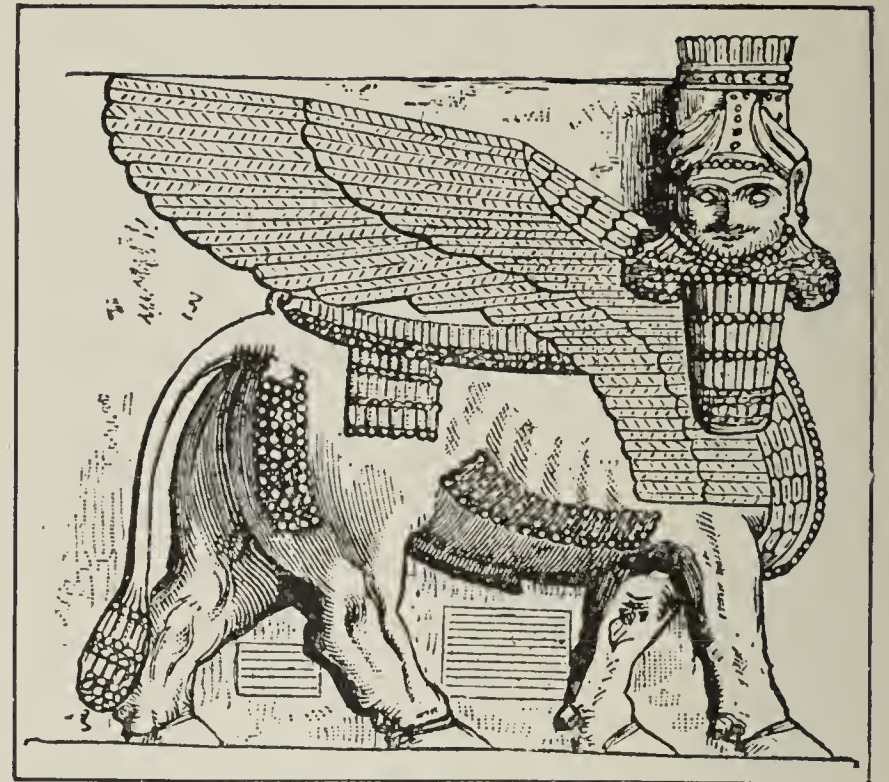
Huckins, A. E., Champaign, Ill.

Kenfield, F. S., Augusta, Mich.

Kimbell, E. C., Chicago.
Knight, Edward F., Buffalo, N. Y.

Jenkins, J. M., Montgomery, Ala.

Lazear, Julius W., Chicago.



Lazenby, Fred H., Chicago.
Lucke, F. W., Chicago.
Matz, Herman L., Chicago.

Mayer, C. P., Bridgeville, Pa.

Meyer, Harry L., Alton, Ill.
Moroney, J. J., Chicago.

Moulding, T. C., Chicago.
McCannell, J. S., Milton, Ont., Canada.

Oldham, A. A., Canton, O.
Oppen, P. J., Denver, Colo.

Pill, J. B., Chicago.
Penfield, R. C., Bucyrus, O.

Place, B. F., Gallion, Ohio.
Potts, George W., Indianapolis, Ind.

Pursell, Walter, Cincinnati, O.

Queisser, R. L., Cleveland, O.

Randall, T. A., Indianapolis, Ind.

Raymond, C. W., Dayton, O.
Rodgers, Eben, Alton, Ill.

Rodgers, L. E., Chicago.
Root, A. R., Philadelphia, Pa.

Root, R. S., Fort Worth, Tex.

Rorick, C. L., Chicago.
Rose, L. G., Minneapolis, Minn.

Rosenberg, H. H., Chicago.
Rouse, Thomas S., Brazil, Ind.

Schlake, William, Chicago.
Simpson, William, Chicago.
Smith, Fred G., Omaha, Neb.

Steadman, Chris., New York City.

Stevenson, C. G., Wellsville, O.

Stephenson, F. A., Mason City, Ia.

Supple, Guy J., Danville, Ill.
Talbot, Fred, St. Louis, Mo.

Trautwein, J. O., Chicago.
Underwood, J. T., Detroit, Mich.

Vandaveer, Jennings, Houston, Tex.

Varney, William P., Chicago.
Vater, Geo. F., Cleveland, O.

Ver Nooy, Chas. B., Chicago.
Videtto, George, East St. Louis, Ill.

Viele, M. C., North Adams, Tex.

Wadsworth, D. L., Cleveland, O.

Weatherford, I. J., Lincoln, Neb.

Wells, Iverson C., Chicago.
Whitmore, H. G., Rochester, N. Y.

Whitworth, W. J., Youngstown, O.

White, F. G., Chicago.
Williams, Milton J., Chicago.

THE MEMBERSHIP.

In addition to the above list the following names constitute the membership of the Ancient Order of Chaldeans, a numerical number being given in each case which shall be perpetual. Should a vacancy be declared through death or otherwise, the number shall forever be declared so vacated.

101 Flood, L. W., Chicago.
102 Binyon, Hal O., Chicago.

103 Druck, Vaclav F., Chicago.

104 Hicks, C. G., Chicago.
105 Kimbell, H. M., Chicago.

106 Landers, Cole C., Chicago.

107 Carter, W. G., Chicago.
108 Hults, —, Chicago.

109 Bach, Julius H., Chicago.
110 Tuthill, J. B., Chicago.

111 Thomas, George E., Chicago.

112 Wolter, Henry F., Chicago.

113 Buchanan, D. A., Chicago.

114 Fletcher, E. E., Chicago.
115 Barry, E. Phil., Chicago.

116 Englehardt, Charles, Chicago.

117 Long, J. F., Chicago.
118 Grand, E. F., Cincinnati, O.

119 Moulding, J. W., Chicago.

120 McFarlane, P. A., Chicago.

121 Pierce, Daniel N., Chicago.

122 Ruehle, George S., Chicago.

123 Scheffler, C. D., Chicago.

124 Rockford, John J., Chicago.

125 Ranen, N. J., Chicago.

126 Robinson, Poze A., Chicago.

127 Lutter, Walter B., Chicago.

128 Kelly, A. B., Chicago.

129 Loeffler, Adolph, Chicago.

130 Lyons, James J., Chicago.

131 Nast, A. G., Chicago.

132 Blattner, Oscar J., Chicago.

133 Borsody, Louis, Chicago.

134 Sly, G. E., New York.

135 George, Edwin M., Chicago.

136 Hansen, William M., Chicago.

137 Bohnsack, W. G., Chicago.

- 138 Bichl, T. A., Chicago.
 139 Balhatchet, H. S., Chicago.
 140 Jacobs, S. T., Chicago.
 141 Mertens, Cyril P., Chicago.
 142 Podolsky, Harry C., Chicago.
 143 Simpson, Peter L., Chicago.
 144 Simpson, Herbert S., Chicago.
 145 Sullivan, Jos. P., Chicago.
 146 Middleton, Edwald L., Chicago.
 147 Minton, F. R., Chicago.
 148 Peterson, C. J., Chicago.
 149 Hammett, J. A., Chicago.
 150 Alsip, Geo., Ft. Williams, Ont.
 151 Bonner, Charles A., Chicago.
 152 Vermilya, N. L., Thurbur, Texas.
 153 Hamerschmidt, A., Lombard, Ill.
 154 Miner, F. E., Chicago.
 155 Mitchell, S., St. Louis, Mo.
 156 Smith, P. A., New Brighton, Pa.
 157 Sykes, H. R., Plymouth, O.
 158 Drennan, Geo. B., Plymouth, O.
 159 Taylor, Wm. M., Milwaukee, Wis.
 160 Zimmerman, M. K., Pittsburgh, Pa.
 161 Williams, Milton F., St. Louis, Mo.
 162 Dieterich, Geo. I., Wilmette, Ill.
 163 Denison, Geo. A., Cleveland, O.
 164 Deckert, E. F., Chicago.
 165 Humphreys, W. A., Chicago.
 166 Cobb, Ed. H., Minneapolis, Minn.
 167 Conley, Edw. T., Bradford, Pa.
 168 Houghtaling, E. M., New York.
 169 Jacquart, Charles E., South River, N. J.
 170 Jewett, C. E., Nelsonville, O.
 171 Nusbaum, Benj. K., Philadelphia, Pa.
 172 Randall, J. E., Indianapolis, Ind.
 173 Turpin, W. U., Ft. Dodge, Ia.
 174 Terry, J., Kingston, N. Y.
 175 Biglow, Ernst O., New London, O.
 176 Anderson, G. A., East Liverpool, O.
 177 Alsip, C. H., Chicago.
 178 Bach, Frederick A., Chicago.
 179 Blount, John D., Chicago.
 180 Sprague, L. W., McArthur, Ohio.
 181 Cornean, R. J., Chicago.
 182 Stratton, Chas. C., Bradford, Pa.
 183 Howard, R. V., Chicago.
 184 Allison, W. P., Chicago.
 185 Howard, Roy Brooks, Chicago.
 186 Rowell, R. J., Ft. Wayne, Ind.
 187 Lyman, Geo. R., Chicago.
 188 Boligians, J. R., Chicago.
 189 Morse, E. A., South Bend, Ind.
 190 Schapper, Walter, Chicago.
 191 Desmond, Louis F., Chicago.
 192 Watson, Geo. O., Chicago.
 193 Hock, Jos., Chicago.
 194 Carner, F. B., Chicago.
 195 Schutt, Chas. L., Chicago.
 196 Weld, Harold K., Chicago.
 197 Bermewitz, Wm. H. K., Chicago.
 198 McCarthy, Wm. H., Chicago.
 199 Simpkins, R., Chicago.
 200 Belden, B. B., Canton, O.
 201 Dunn, C. A., Chicago.
 202 Pratt, Wm. H., Chicago.
 203 Buckley, Jos., Aledo, Ill.
 204 McFarland, Jas. E., Chicago.
 205 Schutte, F. A., Chicago.
 206 Bradford, R. A., Martinsburg, W. Va.
 207 Stevens, E. P., Morgan Park, Ill.
 208 Aubrey, A. J., Youngstown, O.
 209 Holmes, H. W., Detroit, Mich.
 210 Kiger, Harry G., Fulton, Mo.
 211 Allwine, Wm. C., New Oxford, O.
 212 Hinkley, R. B., Luverne, Minn.
 213 Jenks, H. P., Vigo, O.
 214 Waldron, Austin J., Chicago.
 215 Hamilton, H. S., McArthur, Ill.
 216 Aten, J. F., New London, O.
 217 Ittner, Warren W., Belleville, Ill.
 218 Whitacre, R. E., Chicago.
 219 Arbogust, C. O., Hamilton, O.
 220 Holmes, F. B., Detroit, Mich.
 221 Kimbell, M. N., Park Ridge, Ill.
 222 Ayers, E. M., Zanesville, O.
 223 Johann, H. H., St. Louis, Mo.
 224 Kurman, W. O., Maple, Md.
 225 Alsip, W. P., Winnipeg, Canada.
 226 Kanengeiser, F. R., Bessemer, Pa.
 227 McNees, Geo. W., Kittanning, Pa.
 228 Merrill, Frank H., Minneapolis, Minn.
 229 Howell, W. A., Toledo, O.
 230 Anderson, Jr., Jno. W., Watseka, Ill.
 231 Dunn, A. J., Columbus, O.
 232 Hermes, N., Worcester, O.
 233 Conway, Wm., Philadelphia, Pa.
 234 Lemis, J. F., Jackson, Mich.
 235 Bailey, W. R., North Hampton, Mass.
 236 Drew, Geo. H., Buffalo, N. Y.
 237 Carter, H. W., Oshkosh, Wis.
 238 Learned, John F., Cleveland, O.
 239 Lutter, H. W., Glenview, Ill.
 240 Barr, C. C., Streator, Ill.
 241 Greene, W. B., Aurora, Ill.
 242 Lamscher, Philip J., New Galilee, Pa.
 243 Carhart, C. C., Sheffield, Pa.
 244 Blackburn, W. T., Paris, Ill.
 245 Ferrell, Frank L., Zanesville, O.
 246 Kerfoot, W., Kansas City, Mo.
 247 Gerstenberger, L. L., Philadelphia, Pa.
 248 Boss, John C., Elkhart, Ind.
 249 Forsythe, J. W., Fremont, O.
 250 Cunningham, W. R., Bucyrus, O.
 251 Freese, Arthur J., Galion, O.
 252 Carter, F. R., Peoria, Ill.
 253 Freeman, J. O., New Windsor, Ill.
 254 Blair, C. C., Girard, O.
 255 Green, A. P., Mexico, Mo.
 256 Leppert, E. B., Indianapolis, Ind.
 256 Gardner, C. A., Westwood, N. J.
 257 Gowanlock, James W., Ft. Williams, Ont.
 258 Cullen, J. W., Wilmette, Ill.
 259 Glockler, Geo., Elmore, O.
 260 Crook, Charles W., Catskill, N. Y.
 261 Gregory, M. E., Corning, N. Y.
 262 Kincaid, W. B., Boonspath, Va.
 263 Curtis, V. S., Grant Park, Ill.
 264 Gaddis, LeRoy W., Columbus, O.
 265 Kenny, R. S., Hebron, Ind.
 266 Burgess, Wm., No. Tadmorden, —.
 267 Greenlee, H. R., Elyria, O.
 268 Lenz, Paul O. H., Minneapolis, Minn.
 269 Lindsay, R. D., Denver, Col.
 270 Carpenter, C. H., Martinsburg, O.
 271 Lee, H. Jerome, New York.
 272 Denison, J. H., Coffeyville, Kans.
 273 Byron, W. H., Buffalo, Kans.
 274 Combs, L. I., Gary, Ind.
 275 Haigh, L., Bucyrus, O.
 276 Bray, Charles H., Helena, Mont.
 277 Duncan, Jr., James E., Washington, Pa.
 278 Howard, E. C., Columbus, O.
 279 Borgner, Cyrus, Philadelphia, Pa.
 280 Dawson, Henry, Springfield, Ill.
 281 Hammond, J. B., Bolivar, Pa.
 282 Brubaker, G. S., Peru, Ind.
 283 De Rosay, Warren, Corey, Pa.
 284 La Dow, B. E., Fredonia, Kans.
 285 Fiske, J., Parker B., Auburndale, Mass.
 286 Blair, Marion W., Kush-equa, Pa.
 287 Butterworth, F. W., Danville, Ill.
 288 Ferguson, R. G., Cleveland, O.
 289 Ball, Wm. J., Des Moines, Ia.
 290 Everhard, M. Mc., Massillon, O.
 291 Knapp, H. Jason, N. Tonawanda, N. Y.
 292 Black, John H., Buffalo, N. Y.
 293 Foster, E. P., Youngstown, O.
 294 Keiler, Arthur John, Lombard, Ill.
 295 Barnes, Geo. W., Washington, D. C.
 296 Lochrie, Dan., Toronto, Can.
 297 Caleb, Geo., Cleveland, O.
 298 Ebaugh, F. C., Washington, D. C.
 299 Bloomfield, Howard W., Metuchen, N. J.
 300 Donahoe, Fred W., Massillon, O.
 301 Fisher, Ben S., Union Furnace, O.
 302 Bushank, C. D., Indianapolis, Ind.
 303 Dennison, R. L., Kansas City, Mo.
 304 Frid, J. E., Hamilton, Ont., Can.
 305 Knoske, Oscar G., Delaware, O.
 306 Blackmer, F. G., St. Louis, Mo.
 307 Deeds, D. D., Elyria, O.
 308 Kanengeiser, P. A., Bessemer, Pa.
 309 Barnhart, Jr., W. R., Worcester, O.
 310 Fuller, C. S., Buffalo, Kans.
 311 Bussell, W. T., Brazil, Ind.
 312 Henry, W. D., Sewickley, Pa.
 313 Ballou, B. W., Neodesha, Kans.
 314 Forbes, G. E., Mexico, Me.
 315 McGill, David, Westmount, Can.
 316 Hudson, Andrew, Chanute, Kans.
 317 Moody, Geo. W., Highgate, Ont.
 318 Martin, C. W., Ft. Worth, Tex.
 319 Montrief, J. V., Bridgeport, Tex.
 320 McCrea, Thos. H., Brazzil, Ind.
 321 Millar, Charles A., Toronto, Can.
 322 Smith, Roy G., Kansas City, Mo.
 323 Moatz, H. C., Cleveland, O.
 324 Sturtevant, E. R., Monmouth, Ill.
 325 Mentz, G. B., Wallkill, N. Y.
 326 Snyder, A., Portage la Prairie, Man.
 327 Richards, Jr., B. H., Edwardsville, Ill.
 328 Neer, J. J., Atlanta, Ga.
 329 Poston, Ed., Martinsville, Ind.
 330 La Fountain, F. C., Kansas City, Mo.
 331 McFadden, C. P., Toronto, O.
 332 Powers, E. L., New York.
 333 Poston, Emmett, Martinsville, Ind.
 334 Murphy, J. L., Nelsonville, O.
 335 Nettleton, Guy E., Mason City, Ia.
 336 Penfield, L. W., Willoughby, O.
 337 Penfield, Harold C., Bucyrus, O.
 338 Richardson, W. D., Worthington, O.
 339 Pratt, Clifton B., Congress Park, Ill.
 340 Moores, F. Lawson, Cincinnati, O.
 341 Rowland, J. R., Youngstown, O.
 342 Schaffer, J. C., Tiffin, O.
 343 McIlwane, Frank, Woodlawn, Ill.
 344 Poate, W. G., Sidney, Manitoba, Can.
 345 Nicholson, J. B., Toronto, Ont.
 346 Martin, Jas. P., New York.
 347 New, Ryland H., Toronto, Can.
 348 Reece, Walter, Cleveland, O.
 349 Phillips, Clarence A., St. Paul, Minn.
 350 Nixon, F. J., Duluth, Minn.
 351 Reid, Archibald S., Philadelphia.
 352 Freece, H. H., Gallion, Ohio.
 353 Reagan, Jno. W., Knoxville, Tenn.
 354 Madison, C. R., Algona, Ia.
 355 Nettlehorst, Carl, Park Ridge, Ill.
 356 Robb, J. W., Clinton, Ind.
 357 Potter, D. R., Clarksburg, W. Va.
 358 Stevens, Douglas F., Danville, Ill.
 359 Mooney, Geo. F., Columbus, O.
 360 Rose, G. D., South Bend, Ind.
 361 Smith, Fred G., Omaha, Neb.
 362 Smith, Steven, Mattoon, Ill.
 363 McElroy, R. H., Dayton, O.
 364 Sankey, Jas. M., Terre Haute, Ind.
 365 Mamer, J. G., Benton Harbor, Mich.
 366 Mamer, P. J., Benton Harbor, Mich.
 367 Mamer, J. M., Campus, Ill.
 368 Mamer, N. L., Campus, Ill.
 369 Perrott, R. O., Bucyrus, O.
 370 Russell, Jos., Toronto, Can.
 371 Schivier, Theo. C., Ft. Wayne, Ind.
 372 Stoner, Jno. M., Cincinnati, O.
 373 Stillwaugh, J. C., Toronto, Ont.
 374 Soalfsburg, Geo. W., Aurora, Ill.
 375 Swanson, Geo. W., Fridley, Minn.
 376 Wright, J. S., Toronto, Can.

(Continued on page 776)

With the Potter

Domestic pottery manufacturers have hope that the provisions of Schedule "B" of the new tariff bill will strike a snag when it reaches the United States Senate, as opinion is general that the bill will go through the lower house in its present form. According to the best information obtainable by officials of the United States Potters Association, manufacturers of all commodities affected by the new schedule will do their utmost in having the Senate grant an open hearing in committee, so that the manufacturers can show just where the new schedule will affect their business, and that of the workers. It is also openly asserted that the new tariff bill will not reduce the high cost of living, insofar as the clay products are concerned. However, the foreign pottery manufacturers, especially those in England, have to pay more for making their wares than ever before. Wages have been advanced, freight rates on ocean and American rail lines have been increased, and the price of coal in England has also gone up over 100 per cent. With these conditions taken into consideration, the English pottery manufacturer is not in a position to compete with the American manufacturer like he was a few years ago. In the face of impending tariff changes, some of the American pottery manufacturers are going ahead and increasing the capacity of their plants. The Homer Laughlin China Co., at Newell, W. Va., is erecting a new fifteen-kiln plant, and on adjoining property, the Edwin M. Knowles Pottery Co., is also erecting a fifteen-kiln plant, thus giving the industry an increased production of thirty kilns in this one locality alone. The W. S. George Pottery Co., at Cannonsburg, Pa., is erecting two additional kilns, and the Owen China Co., at Minerva, O., is building another kiln. At Kittanning, Pa., the Pennsylvania China Co., will operate its fourteen-kiln plant which has been inactive for more than over a year. At East Liverpool, O., the West End Pottery Co., has let contracts for the construction of two additional kilns, while at Beaver Falls, Pa., the Mayer China Co., manufacturers of vitreous china, is increasing capacity. A six-kiln plant at New Castle, Pa., which was recently taken over by the Shenango China Co., of that place will be placed in operation May 15, this giving the firm a twelve-kiln capacity proposition.

However, while these manufacturers are increasing capacity, they are vitally interested in the final action on the proposed tariff.

Domestic pottery manufacturers throughout the United States are vitally interested in the ultimate success of a continuous kiln, which is now being given through tests in one of the largest potteries in the Staffordshire, England, district. Information about these tests have just been received in this country. For some years, the domestic manufacturers have been endeavoring to hit upon some plan whereby ware could be fired with less expense. An electric kiln was invented, but this proposition was never given practical tests in any pottery. An East Liverpool kiln-building company some few years ago built a continuous kiln, but it was not the success that was anticipated.

At Sebring, O., a continuous kiln was built on original lines, and this was worked with more or less success for quite a time. However, a continuous kiln which will work under any and all conditions, is sought by the domestic pottery manufacturers, and also by the sanitary manufacturers.

Should the English type of continuous kiln prove a success, it will be adopted by the American manufacturers quickly.

The Guernsey Earthenware Co., of Cambridge, O., has let the contract for the construction of two additional kilns, the increased capacity being required on account of heavy business. This company is only manufacturing cooking ware, and was one of the original makers of this class of goods.

With the consolidation of three stoneware potteries in the Crooksville, O., district, with a capital stock of \$250,000, vast increases in the production of this class of ware in Ohio may be the result. Under the name of the Burley & Winter Stoneware Pottery Co., that plant and the Keystone Pottery Co., and the John G. Burley Stoneware Pottery Co., have joined forces. The consolidation of these three plants makes the company the largest stoneware manufacturers in that part of Ohio. Additional kilns are to be built by the new company during the early spring. The production will be sold through one general office.

Floods in the Upper Ohio Valley this spring have caused a loss to the manufacturers of over \$50,000 in damage to plants, and over \$300,000 in wages to the employes. The flood of a few weeks ago in the East Liverpool district was just six inches less than that of 1907, and that 1907 flood was within eight inches of touching the high water mark of 1884.

Five potteries along the river in the East End of East Liverpool were flooded. The Thompson Pottery Co. and the Harker Pottery Co. were the heaviest losers. At the Harker plant the flood entered the green room, floated all boards from the stilliards, and the green ware was upset into the muddy water. This ware was a complete loss, for the clay could not even be worked over again.

Potteries in Newell and Chester, W. Va., were unable to ship a pound of freight for over two weeks on account of the Pan Handle branch road being washed out. The Homer Laughlin China Co., in Newell; the Edwin M. Knowles China Co., and the Taylor, Smith & Taylor Pottery Co., in Chester, W. Va., were the ones concerned. It was not possible for the firms to haul shipments to East Liverpool, across the Ohio river, for the Pennsylvania Railroad Co. had placed an embargo on all western shipments.

According to a report heard in the western territory, plans are being drawn in East Liverpool, O., for the construction of a pottery to be built in Georgia. Several men said to now be identified with the industry are connected with the scheme.

With the discharge of the receivership of the Globe Pottery Co., in East Liverpool, O., it is possible that a new company will be formed, and other name adopted, and the Globe plant operated by the new concern. Such a movement is now being given serious consideration. Willard R. Morris, a former pottery salesman, who was made receiver of this company, was succeeded in the management of the Globe by C. H. Hartt, formerly connected with the Potters Co-Operative Co., of East Liverpool.

Unless the City of Wellsville, O., gives the United States Pottery Co. protection from high water, threats have been made to the city officials that the plant will be removed. The councilmen of Wellsville have asked the company if "they are expected to change the course of the Ohio River through West Virginia?"

The plant of the Pennsylvania China Co., at Kittanning, Pa., which was formerly under the management of Charles Howell Cook, of Trenton, is being renovated and improved and will be placed in operation within the next two months, from present indications. The company is also operating a plant at Ford City, Pa., and two kilns of this property are used for the manufacturing of high potential electric insulators. The remainder of the kiln capacity, however, is used for the

manufacturing of semi-porcelain dinner ware and specialties.

Pottery workers in the Crooksville, Niles and East Liverpool, O., districts, and those in Kokomo, Ind., and Clarksburg, W. Va., desire a change in the insurance laws of the National Brotherhood of Operative Potters, and at the coming Atlantic City convention an amendment to the insurance laws will be proposed. The amendment provided a death benefit of \$150 and eliminates the words "good standing" from one of the sections.

Charles A. May, president of the Maddock Pottery Co., of Trenton, N. J., stated that his plant would not be affected as much as some others by the proposed tariff reduction, as the big end of the Maddock output is hotel china. He reports business as good at the plant. D. William Scammell, one of the Maddock Co.'s traveling salesmen, is on a Western trip at present, while John Christie is down East on a similar business trip, and John W. Henny has just returned with a bunch of orders from a Southern trip which took him as far as New Orleans.

The Cook Pottery Co. has succeeded in producing underglaze gold on their ware.

All Western potteries are crowded with business and plants are working full capacity.

John M. Davidson has been appointed general superintendent of the Salem Pottery Co., succeeding William Smith, who resigned to take a position with the Perryville (Ohio) Pottery Co.

The flood crippled the Florentine Pottery Co., of Chillicothe, Ohio, \$8,000. All the raw material on hand was washed away.

Western shops complain of a scarcity of decorators. Indianapolis plants have asked East Liverpool for aid.

The Laughlin potteries at East Liverpool and Newell are working full capacity.

Trenton Potteries Co. declared a regular quarterly dividend of 1 per cent on the non-cumulative preferred stock, payable April 25th to stock of record April 17th.

Through the achievements made by Ronald McPherson, a presser of the Thomas Maddock Sons Co., Trenton, N. J., it has been decided by the management to allow the presser to devote his entire time to experiments in the line of producing a uniform clay.

Troubles arising over the secrets of mixing glazes caused the temporary closing of the plant of the New Jersey Tile Co., Trenton, N. J., incidentally disclosing an interesting story. It seems that upon the death of James Robinson, the original owner, the plant went to the family, consisting of the widow and two daughters by a former wife. The daughter, Dorothy, now Mrs. Weeden, was appointed by the father as the executive head and to her alone was revealed the secret of the glaze mixing, which made it possible for her to control the plant, in that if she left the ware could not be turned out. Owing to the fact that Mrs. Weeden refused to share the secret with her mother and sister, a feud sprang up which came to a climax about two months ago, when the plant was closed and remained idle for several weeks because Mrs. Weeden refused to operate it. The plant was reopened several weeks ago and all appeared to be harmonious until Mrs. Robinson employed a man who had been discharged. Mrs. Weeden objected on the score that the plant was being run "one-sided." The next day notices were posted up notifying workmen not to take orders from Mr. or Mrs. Weeden. As a consequence the plant is closed pending an agreement between the three owners. Mrs. Weeden appears to hold the key to the situation, as no one mixer can be secured who can make ware similar to that on which the company's business has been built up.

The Dryer

Artificial dryers for brick and tile are usually worked by means of a large wooden stack, but there are several advantages in using a fan, says a writer in "Tonware-fabricant." For instance, the latter will enable all the waste heat from the various kilns to be drawn into the dryer and there utilized, with a resultant saving in fuel. When drying tender clays in chambers—a method which has proved successful in all parts of the globe—the fan enables the draught and warm air to be regulated to the greatest nicety in a manner quite impossible with a stack. If the source of heat for the dryer is the kiln or kilns, the works may be run both winter and summer without intermission and with a greater output than when other forms of dryer are used. In a continuous kiln there is, theoretically, no waste heat, but most kilns are built too short for all the heat to be utilized within them; consequently, there is, in reality, a large amount of waste heat available for drying. The best means of using this is to have a dryer operated by a fan. A considerable saving may be effected in all kilns less than 70 yards long (i. e., with a tunnel-length of less than 150 yards), and as most continuous kilns have a tunnel-length of only 60 yards, the available heat which is now wasted is very great. By working with ample draught, the output is increased without any risk to the goods, and the heat which is ordinarily lost, because the kiln is too short, is utilized in drying fresh goods. The complaint is sometimes made that a particular clay will not stand fan-draught. This statement is made without a full knowledge of the facts, for there is not a single clay which can be used commercially which will not stand a fan-draught when the latter is properly applied to it. Many clayworkers imagine things about their clays which are far from true. This is unfortunate and hinders progress.

The Silica Brick Co., of Perryopolis, Pa., has added a new kiln and overhauled and improved its dryer.

If the clay or water contains sulphates in any considerable amount we may expect scumming in the drying process. This is particularly true if lime is in evidence.

In rotary dryers, or any dryers in which clay is dried before being made into ware, you may look for trouble. There are here combustion gases in connection with moisture, or at the heat end we may have heat enough to start the sulphur from the pyrite in the clay, and this produces scum.

The rapidity of drying goes a long way in preventing scumming in some clays.

Pug with warm water. It will hasten your drying and improve your ware.

It frequently happens that in wet seasons the clay, as mined, is too wet to be used to advantage, the clay being much more difficult to grind on account of its sticky condition. To obviate this difficulty, the clay is at some plants gathered and stored in sheds. An inexpensive shed, as shown in the illustration and described by Searle in "Modern Brickmaking," is constructed of venetian shutters and open brickwork with a light roof, keeps the clay dry and the air passing through dries the clay slowly at a trifling cost. No heating arrangement is provided, but on the most exposed side weather boarding is used instead of the open brickwork to keep out the rain.

Contributions of news items and useful hints and suggestions are solicited for this department. Help us make it valuable to those interested.—THE EDITOR.

Hollow Block

A booklet under the title "Thermic Fire Clay Hollow Tile Fire Proofing" has been issued by the Union Mining Co., Fidelity Building, Baltimore, Md., and is presented for the consideration of architects, contractors, supply houses and those interested in the erection of fireproof surfaces. The manufacture of hollow tile fireproofing is a comparatively recent line to be taken up by the Union Mining Co. However, this concern is by no means unknown to the users of high grade refractories. The booklet contains many illustrations of buildings under process of construction in which "Thermic" fire clay hollow tile fireproofing was a large factor, and also gives a carefully prepared outline of the manufacture of that product and the facilities for taking care of the business entrusted to the Union Mining concern. A view of the Union Mining Co.'s plant is shown in the booklet and also many illustrations of the various fireproof hollow tile which is manufactured by that concern. Although the Union Mining Co. has been manufacturing "Thermic" fire clay hollow tile only a few months, it has closed several contracts for the fire clay hollow tile fire proofing required in some of the largest buildings to be erected in various cities in the East. The booklet contains a table of estimated weights of the various tiles for the information of architects, contractors, etc., and also other information of general interest to those likely to purchase this material for fire proof construction.

Hollow tile is entering largely into the construction of the new railroad passenger stations throughout the country. This should give the hollow block maker a good selling argument for in no form of construction is there a more severe test for hollow block. The tremendous force of the moving trains has a jarring and racking effect on the station that severely tries building material and unless that material is right it is apt to tear the heart out of the structure.

The requirements of the farmer should offer a most excellent suggestion for the hollow block maker. There is not a piece of construction work on the farm—from a pig pen or chicken coop to the barn or dwelling, that would not be better if made of burned clay.

Pittsburgh is taking the lead in the use of hollow block for residence construction and it is encouraging to note that brick is to be used for most of the facing, rather than concrete or stucco.

Geo. C. Haerle, a capitalist of Indianapolis, Ind., and his associates are planning to manufacture silo blocks on a large scale at plants in three states.

U. S. and Lewis Pershing are the new owners of the Baltic Brick and Tile plant located at New Philadelphia, O., having bought the property for \$7,000 from Henry C. Gerber and E. M. Domer. The plant will be improved, capacity increased, and an effort made to enlarge the scope of territory the former owners covered in the sale of its several lines.

The Reynoldsville Brick & Tile Co., of Reynoldsville, Pa., has leased the plant of the Sykesville Clay Products Co., near Punxsutawney, Pa. Both properties are now being operated by the former concern.

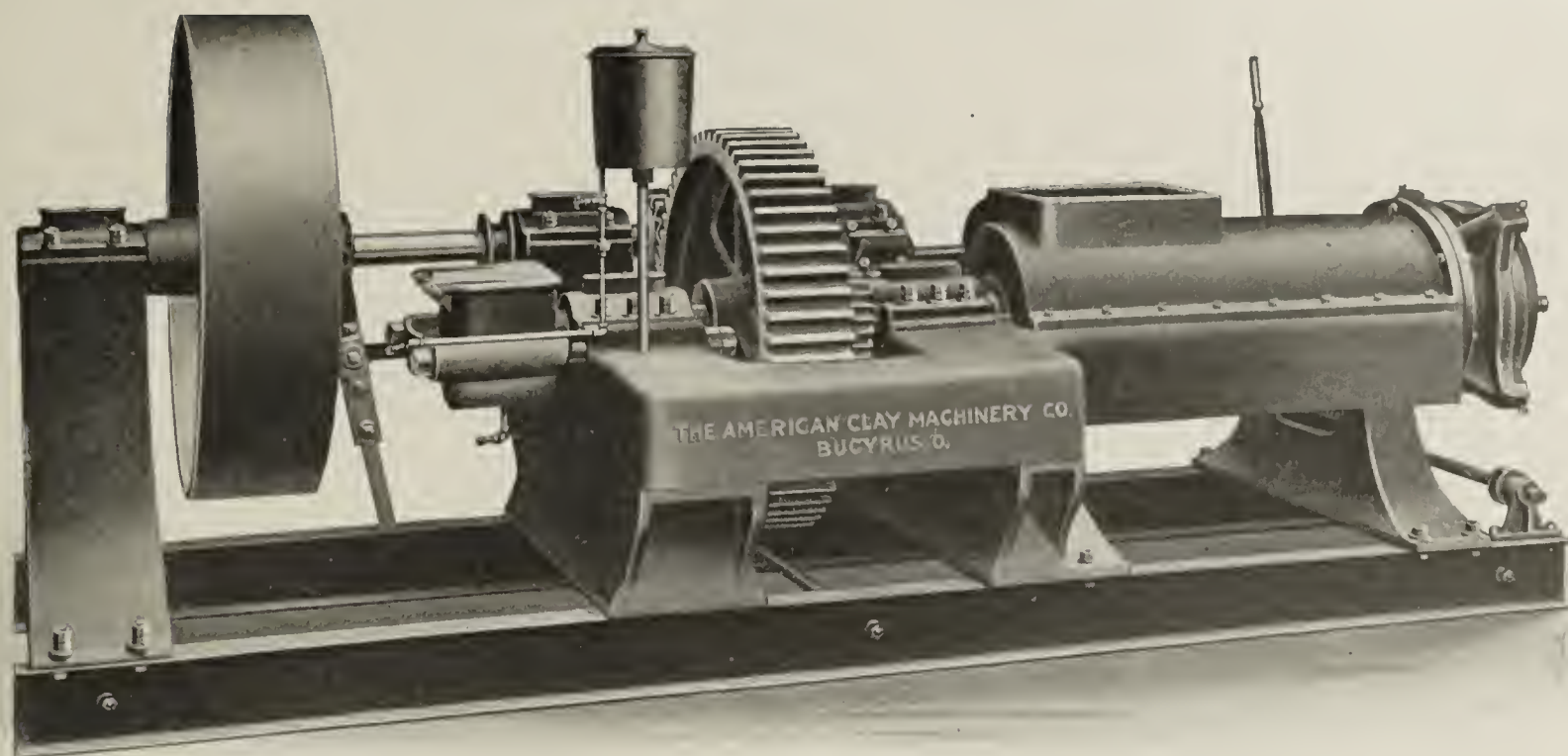
Fire-proofing materials will be made a feature of the production of the New York Clay Products Co., which has been formed at Sayresville, N. J., with a capital stock of \$100,000. W. J. Lyle, of Highland Park, N. J., is at the head of the new interests. The firm will also go into the brick manufacturing business in connection with its fire-proofing production.

Strikes Cripple Several Plants.

New York, April 24.—About two thousand persons are affected by the strike among the laborers at the terracotta plants in the Central New Jersey clay working zone, and the establishments of the National Fireproofing Company, Henry Maurer & Son, Didier-March Company, the Raritan River Clay Company, the C. Pardee works and the United Lead Company where some clay workers are employed, and several plants at Perth Amboy, Fords and Keasbey, N. J., are more or less crippled. More than 1,500 laborers are out on strike today in the territory east of the Raritan river alone. The employees want more pay and shorter hours. Officials of these companies say that conditions are not ripe to permit of larger payrolls. The consuming market has been tight during the last three months with the result that competition has been very keen and prices have been shaded, although an advance was tentatively made by the National Fireproofing Company before the first of the year. As far as recognition of the clay workers' union is concerned, opinion among the manufacturers seems to differ, but as a general rule they are decidedly opposed to granting the men this concession for purely economic reasons.

Vice-President Keasbey has said that he anticipates no serious trouble as a result of the walkout of between 700 and 800 men at the plants of the company at Keasbey, N. J. He says that no formal notification as to the reason for the strike has yet been received from the men, who have been paid the highest wages paid anywhere for similar work, the minimum for common labor being \$1.75 per day. No attempt will be made, so it is said, to operate the plants with "strike breakers." The strike is spreading to a number of industries in the same district.

At the annual meeting of the stockholders of the National Fireproofing Co., which was held in the general offices of the corporation in the Fulton Building, Pittsburgh, Pa., April 3-4, the following board of directors was elected for the fiscal year: D. F. Henry, J. B. Finley, W. A. Dinker, John R. Gregg, E. H. Straub, T. H. Given, W. D. Henry, W. L. Curry, J. S. Craig, C. E. Andrews, D. M. Campbell. The board will organize later, but it is intimated that the former officers will be elected to succeed themselves. President W. D. Henry declared that the Canadian plant is earning from 10 to 12 per cent on its capital stock and denied that the company in any manner whatever had endeavored to keep anything hidden regarding the condition of the parent company. Mr. Henry also explained in detail the purchase by the company of the Great Eastern Clay Co. and voiced assurance that the plant was a most valuable asset to the parent corporation, being worth at least \$1,000,000, and that the suit pending against the company could not but help fall of its own weight. This because the action was prompted through the National Fireproofing Co. having taken steps in the sale so as to insure the safety of the move to the stockholders of the National. "Our business is holding up remarkably well," continued Mr. Henry in addressing the stockholders' meeting. "In fact, trade is better with us now than at any time since 1906. Nothing has been done on our property at Hadynville regarding testing the acreage for oil, but I understand that oil has been found on all adjoining lands." During the stockholders' meeting, many questions were asked Mr. Henry concerning the affairs of the company, all of which were answered in a very satisfactory and instructive manner. A vote of thanks and confidence was later extended President Henry, the motion first being offered by Sydney F. Eckery, who voted with the minority.



Our No. 233 Auger Machine is strong and durable in every feature and long continued satisfactory operation is sure. In the No. 233 are embodied all the features of modern auger machine building which contribute to economy of operation and decreased cost of manufacturing, as well as increased quality of product. The No. 233 Machine is more machine for the money than any other Auger Machine built. Look up its record and depend upon the 233 living up to its record.



The No. 233 is a high duty machine medium priced. It has steel gears. One piece gear frame mounted on steel I beams. Large steel shafting. Ample bearings. Screws are new design of long lived material specially made. Clay Cylinder is bushed with special metal with provision for taking up wear. Force feed in hopper. End thrust self aligning. Entire machine rigid and worthy.

Send for complete description of the No. 233 and other Clay Working Machinery.

THE AMERICAN CLAY MACHINERY CO., Bucyrus, O.

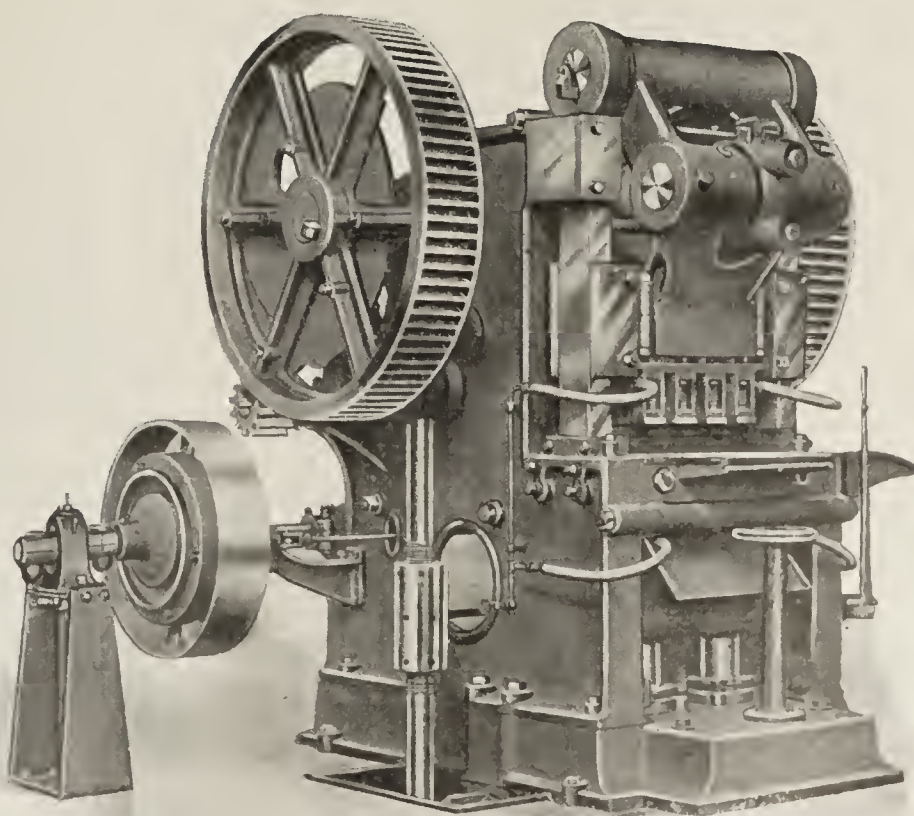
For dependability we recommend our Model "C" Dry Press. It is high grade in design, material and workmanship. It is steady, durable, handy and efficient. The shafts are ample. The frames massive. The gears dependable. The bearings are long, carefully babbitted, perfectly oiled. Large forged steel shafts present almost their entire surface to line of pressure of toggle movement insuring great strength. Side bars of forged steel. Simple ejecting device. Liners easily removable and adjustable. Clay charge can be regulated. Pressure has long dwell being alternate not simultaneous.

Complete description of Model "C" Press or any other machine or appliance on request.



**The American Clay
Machinery Co.**

Bucyrus, Ohio



Much the largest manufacturers of Clayworking Machinery in the world. And much the best.

Face Brick

President Richardson, of the Ohio Face Brick Manufacturers' Association, is considering the advisability of issuing a special express label, to be affixed to packages containing sample brick, and calling attention to the fact that the package is entitled to a special rate, in accordance with a decision handed down by the Interstate Commerce Commission early in 1911. The new rate became effective in June of that year but local express agents have a way of calling everything "merchandise" and letting it go at the highest possible rate. Where brick makers and dealers carry a charge account it is very difficult to check the bills rendered by the express companies, particularly as it is next to impossible to obtain a printed tariff. The consequence is that new and therefor inexperienced clerks or old and frequently careless agents forget the rulings of two years ago and unless their attention is called to the fact that a lower rate than "merchandise rate" is in effect for sample brick, will follow the line of least resistance, which is always the line on which the shipper suffers.

The new labels would be furnished in quantity to members of the Ohio Face Brick Manufacturers' Assn., in which nearly all of the face brick manufacturers in that state hold membership. Some idea of the saving to be safeguarded may be seen in the figures given below, which were published some months ago in "Brick and Clay Record." On a basis of 20 pounds, which is the average weight of three brick, boxed, from Union Furnace, Ohio:

	Old rate	New rate	Saving
To Toledo, Ohio	\$0.60	\$0.35	41.6 per cent
To Detroit, Mich. ....	.70	.35	50. per cent
To Indianapolis, Ind. ....	.60	.35	41.6 per cent
To Chicago .....	.75	.35	53.3 per cent
To Pittsburgh, Pa. ....	.70	.35	50. per cent
To Cincinnati, Ohio.....	.50	.35	30. per cent
To St. Louis, Mo.....	1.00	.45	55. per cent

There is no doubt but that a large proportion of the amount which should have been saved brick men through these reductions have been lost by their own carelessness and by their depending upon the express agent to give them the best rate. The time must come when manufacturers and shippers realize that the man who applies the tariff is paid by the carrier and not by the public. His idea of what is "the best rate" is, as a consequence, apt to be somewhat one-sided.

Have You a Library at the Plant?

Unless you are a man willing to accept any result that may come to you in the ordinary course of business, without care or thought as to the "why of things" you need technical books and ought to have them within reach. The clay working industry is fast becoming an exact science and the man who says "you can't make every kiln burn alike" and "you never know what clay is going to do," belongs to a past generation of clay workers which, in this day of enlightenment, would waste invested capital and promptly run into receivership. We do not overstate when we say that our Clay Workers' Library has "the books you need"—look the list over and see if we are all wrong.

Two thirty-foot kilns are being built at the plant of the Suburban Brick Co., at Wheeling, W. Va. The kilns are being built by Bodley & Phillips, of Moundsville, W. Va.

S. B. Dobbs of Philadelphia has landed several large contracts for face brick. He reports an increasing demand for Tapestry and other varieties of high grade brick for good work.

Insists on Sanitary Milk Houses.

Pittsburgh faces a milk famine through the enforcement of an order from the city department of health requiring sanitary milk houses on all dairy farms supplying milk, cream and butter to Pittsburgh dealers and consumers. Compliance with the order makes necessary the expenditure of approximately \$800,000 by the dairy men. The order affects 8,000 dairy farms, mostly in Ohio, providing 3,000,000 quarts of milk each day for Pittsburgh's use. Failure to comply with the order, which provides for brick, stone or cement buildings with tile or cement floors properly drained, will result in the milk from any dairy not so equipped being refused at the numerous collecting stations in Ohio.

FACE BRICK IN NEW YORK.

Price to Advance When Railroad Wage Schedule Goes Into Effect.

New York, April 24.—Face brick is in a lull in New York as far as demand is concerned, but distributors report receipts of inquiries calling for quantities larger than usual. Instead of the bulk of this inquiry emanating from the city proper, however, it is coming from the suburbs where for some reason, doubtless largely attributable to consistent and persistent advertising, the call for wire-cut-face face brick is growing, just as the use of hollow tile fireproofing and partition blocks is increasing. The full significance of this condition is beginning to dawn upon the rough faced front brick interests here and the extra call is very welcome at this time when the demand for face brick in New York is light. Prices are being shaded a little on some lines here, but as a rule the regular schedule is being well maintained, because the supply is not any too great, especially since deliveries have been disarranged somewhat as a result of the disabling of freight carrying roads following the recent floods in Ohio. Wire-cut-face face brick are held uniformly at stiff levels. Enamels are in slight demand, except in the suburbs. In Queens they are reported to be very active. Discussing the front brick situation with your correspondent this week, the local distributing agent for a well known Pennsylvania front brick manufacturing company, said: "I cannot tell you anything about the price situation because it is one of the most uncertain elements in our line at this time. Whom do you suppose will pay that \$3,500,000 a year increase to locomotive firemen just fixed and about to become operative? Why the freight shippers, of course. Now think just how much front brick comes into this market in a year. The total was 60,000,000 in 1911 and it was almost half as much again last year. That represents some tonnage in the total aggregate handled yearly by railroads carrying front brick into this market. It is probable that this extra burden will be divided between passenger and freight traffic, but I want to tell you that the heaviest part of it will finally fall upon the freight service, and front brick must bear its share of the extra burden. That is why I think that price situation is a most uncertain one, but this I can say: prices very likely will move up slightly just as soon as the extra wage schedule becomes operative and that may be on May first. This is only my personal opinion, but I have found that a great many front brick men have doped the situation out about as I have put it to you."

SAND MOLD BRICK

The lively demand for Sand Mold Brick Continues. No Machine will surpass our Upright Brick Machine in design, efficiency, durability or quality.

It is simple, strong, easy to operate and trouble-proof.

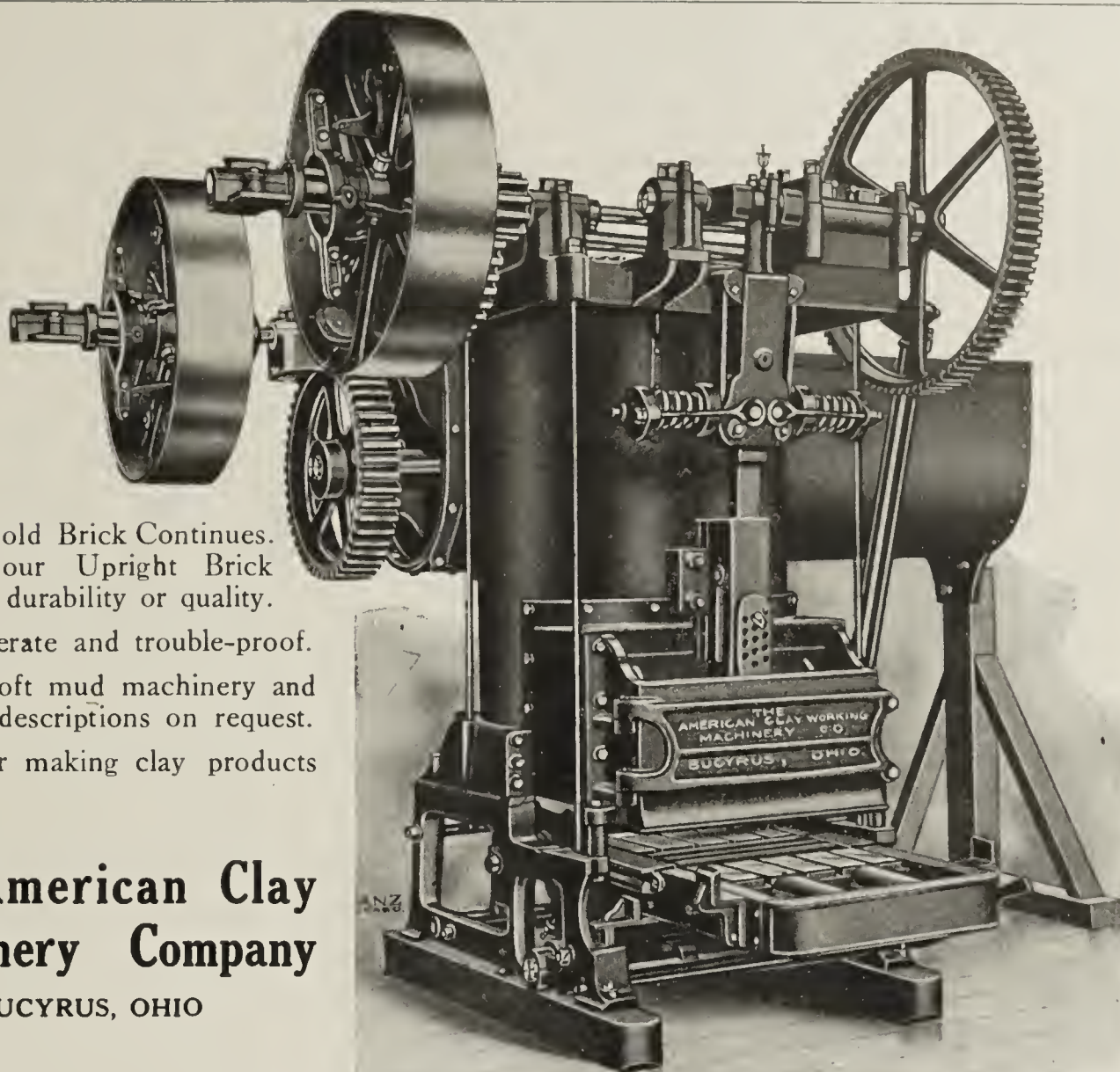
We build a complete line of soft mud machinery and appliances and will send full descriptions on request.

We build every machine for making clay products by all processes.

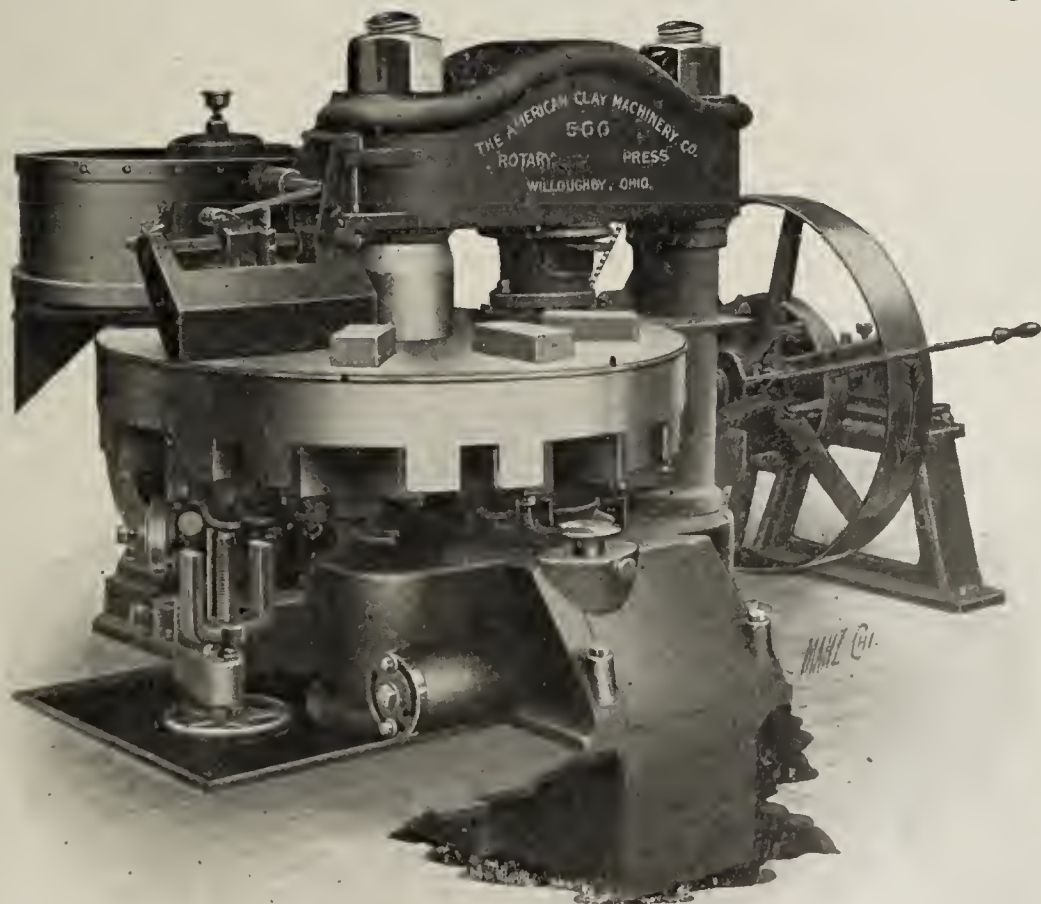


**The American Clay
Machinery Company**

BUCYRUS, OHIO



Sand-Lime Brick Machinery



There is a strain on presses for making Sand-Lime Brick which must be taken into account by the successful machinery manufacturer. It is just as important to the brick manufacturer, because a press of weak construction is sure to make poor brick, big repair bills and an unsuccessful business.

The American Company presses are the result of long experience, careful investigation, exacting designing and that thorough building for which American Machinery is noted. Not only in presses but in all machinery for making high-grade Sand-Lime Brick are our machines superior. We can help to make your plant successful. We have turned failure into success for others by putting them right on equipment.



**The American Clay
Machinery Co.**

Willoughby, Ohio

Much the largest manufacturers of Clayworking Machinery in the world. And much the best.

The Federal Clay Product Co.

Mineral City, Ohio

Fire Brick for Kiln Work Made a Specialty

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Manganese Steel Castings

EDGAR ALLEN AMERICAN MANGANESE STEEL CO.

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Manufactured by
HENDRICK MFG. CO.
 CARBONDALE, PA.

With the Pavers

(Continued From Page 754)

by the Denny-Renton Clay & Coal Co., from their Renton factory. This is the first stretch of brick country road in the state of Washington and is certainly a move in the right direction. The Denny-Renton Co. manufactures seventy-five million paving brick a year.

Bessemer block will be used to pave Union ave., Altoona, Pa. In all about \$120,000 will be expended for brick paving in Altoona this season.

The city of Tacoma, Wash., paved 8.21 miles of city streets, graded 5.53 miles and laid 9.01 miles of cement sidewalks during the year 1912, according to the annual report issued by City Engineer W. C. Raleigh.

The fact that the National Good Roads Association favors brick roads is evidence that investigations have proven that brick pavements are the best that money can buy, the "no repair bill" feature being the chief attraction to far-sighted men.

The credit for the first use of brick as paving material in this country is claimed by Charleston, W. Va., says Municipal Engineering. The claim is based on a sample laid in 1870 and a block in 1873. Bloomington, Ill., also lays claim to the same credit, having a considerable area laid in 1875. These pavements used sand for filler. By 1895, when Wheeler's little book on "Vitrified Paving Brick" appeared, tar or pitch and cement had been added to the list of fillers, Wheeler expressing his preference for cement as building the pavement into a monolith and not being affected by the hot weather. When the first edition of Baker's "Roads and Pavements" appeared in 1903, sand was still the most common filler and cement was next. He describes in detail the difficulties from expansion, but it is evident that the use of expansion joints along the curb is not common, for he suggests that the rumbling of the pavement can be prevented by such joints filled with tar. He also suggests transverse joints filled with tar at intervals and gives instances of the amount of material used.

One of the pavements, South Sixth street, in Terre Haute, laid some twenty years ago, which still has a perfect surface, had a cement filler, but no expansion joints and would undoubtedly have failed from expansion if the soil had not been so light that the curbs were pushed back the necessary amount. Since that date, but more particularly in the last ten years, the stress laid on proper workmanship has gradually brought the quality of brick pavements with cement filler up, and the curb and other construction has also improved, so that the necessity for expansion joints along the curb has become more apparent and they are now carefully specified. Some engineers have made careful specifications for them almost from the beginning, but they are now important parts of the generally adopted standards.

The Denny-Renton Clay & Coal Co., of Seattle, Wash., recently tackled with cold nerve and conviction a selling stunt which involved the laying of a block of vitrified brick pavement on Powell street, San Francisco, which is one of the heaviest traffic streets in that city. This block was laid at no expense to the taxpayers of the city and was laid to demonstrate its worth to the city. It was an expensive experiment for the company but its experience of twenty years with similar brick on Second avenue, Seattle, convinced it that success and future orders would be the only result.

Fire Brick

At the annual meeting of the Queens Run Fire Brick Co. held at Lock Haven, Pa., April 16th, the following officers were elected: William Sleicher, president; Harvey S. McLeod, vice-president; George H. Diack, treasurer and general manager; Henry Colvin, auditor. The company had a good year and an extra dividend of 2 per cent on the capital stock was declared.

Announcement has been made by the Harbison-Walker Refractories Co., with general offices in the Farmers' National Bank Building, Pittsburgh, Pa., that it proposes to build an addition to its fire brick plant at Monument, near Phillipsburg, Pa. The contract for the construction of this improvement has been awarded to Charles S. Wilcox, of Phillipsburg. This company is doing an excellent business at all of its plants, and especially so in the refractory department. This is caused by all of the mills and furnaces being worked to capacity, and their requirements are for large amounts, both for immediate use and for stock purposes. The Harbison-Walker company is one of the largest concerns of its kind in the United States, and is on a sound financial basis, as their last financial report showed. At the last meeting of the board of directors of this company a dividend of one and one-half per cent on the preferred stock was declared, checks for which were mailed April 19 to holders of stock of record of April 10.

At Templeton, Pa., the Hay-Walker Brick Co., which took over the business of the Harbison-Walker Refractories Co., at that place, plans to spend upwards of \$100,000 in making improvements to the property, work upon which is to be started immediately. Additional buildings will be erected, and the capacity of the plant will be greatly increased.

Walker B. Stratton, of Empire, O., has brought an action in the courts in Steubenville, O., against Charles M. Stratton and the Stratton Fire Clay Co., to compel the restoration to the plaintiff of \$30,000 worth of notes, and asking that a mortgage against the property of the Stratton Fire Clay Co., located in Knox Township, in Jefferson county, Ohio, be foreclosed. Besides manufacturing fire brick, the concern is also a large producer of sewer pipe, having a trade general throughout the United States.

The capital stock of the Saxton Vittrified Brick Co., located at Saxton, Pa., has been increased to \$300,000, part of which is to be used in increasing the business of the corporation.

An addition is being built at the plant of the Big Savage Fire Brick Co., at Frostburg, Md., which will give the plant 80,000 square feet additional floor space. The improvement will be completed within a few weeks.

Plans are being formulated by the Cleveland Vittrified Brick Co., of Cleveland, O., for the erection of a new plant in Indiana. Details are not entirely completed.

With a capital stock of \$25,000 the Leeper Fire Clay Co. has been formed by H. C. Johnson, of Pittsburgh, Pa., and Reinsel & Hinden, of Clarion, Pa., with a capital stock of \$25,000, the charter just being granted.

A new ventilating plant is being installed in the fire brick plant of the McFeely Brick Co. at Latrobe Pa. The headquarters of the company are in Pittsburgh, Pa.

The Mutton Hollow Fire Brick Co. of Woodbridge, N. J., is having a busy season. It notes the fact that firms which wish to put a little more money in a building and make it stronger and more serviceable are using fire brick, instead of common brick, in its construction.

St. Louis Vittrified & Fire Brick Co.

Manufacturers of

Fire Brick, Zinc Furnace Lining,
Cupola Blocks, Locomotive Lin-
ings, Patent Lime Kiln Blocks

AND

FIRE CLAY GOODS of ALL DESCRIPTIONS

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We will be pleased to furnish complete information and quote prices on request.

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Two of the many hundred kilns built of these famous brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.
195 So. Clark St., CHICAGO

Fire Brick for all types of kilns.
For burning all kinds Clay Products.

*For Side Walls
For Crowns
For Fire Arches
For Perforated Bottoms*

Consult us when in market.
We are ready to serve you.

DAVIS FIRE BRICK CO.
OAK HILL, OHIO

High Grade Clay

for manufacturers of Terra Cotta, Sanitary ware, Ceramic glaze ware, Tile, Fire Brick, etc. We are equipped to handle any size orders at any time of the year. Samples will be sent upon request.

Cedar Crest Clay Mines

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Mines:—Cedar Crest, Ocean County, New Jersey

Established 1856

HENRY MAURER & SON

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High Grade Fire Brick

Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

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Incorporated 1870

— MANUFACTURERS OF —

Dover and Buckeye Fire Brick

Unexcelled for Kiln Purposes

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Cleveland, Ohio

Quality in Fire Brick.

It is a mistake to suppose that the fusing point, or what is commonly reported as such, is a reliable guide to the heat-resisting power of a material put into practical use. It is also wrong to choose blocks of an uniform texture, as, on heating, the various irregularities in the temperature of different parts of each block can only be taken up by one size of grain, and the mass is much more susceptible to changes in temperature than if it were composed of grains of several sizes. The reputation of some fire-brick does not really rest on their chemical composition (as is commonly supposed), but on their physical properties, though there are no tests for the latter. Some such brick are elastic when heated, the particles composing them neither breaking up nor becoming separated in use. This is due to careful manufacture and to the correct distribution of the ingredients; too many brick show masses of lime in one part while another is deficient in this material. Pure clay melts at about 1,775 deg. C., its fusion point being reduced as the proportion of silica increases, the most fusible material having a composition corresponding to 90.83 per cent of silica and 9.17 per cent of alumina. A mixture containing 62 per cent of alumina should correspond to the protosilicate of alumina and should be perfectly neutral to slags, etc. Aluminous materials are eminently refractory, but they always shrink when heated; this is in marked contrast to the siliceous materials, which do not contract, but are less refractory. Silica brick of a better quality than usual are obtained if calcium chloride is substituted for limewater, but they are weaker when in the green state.—*Revue des Matériaux.*

The St. Louis Fire Brick & Clay Co. of Los Angeles, Cal., is being congratulated on its success in producing a fire brick which stood the furnace test for fourteen days. This test is a matter of record. A letter from the Warman Steel Casting Co. of Los Angeles tells of the test in their furnaces, the time exceeding by three days the competitive brick submitted. Another severe test and one which, perhaps has a much wider significance, was that recently made by Professor Edward Orton, Jr., ceramic engineer, of Columbus, Ohio. Some time ago a request for samples of his California brick was received by Mr. Batley from the Stearns-Roger Co. of Denver, consulting engineers for the American Beet Sugar Co. These brick, unknown to Mr. Batley, were sent to Professor Orton for test. Some time later Mr. Batley received a call from Mr. Schwartz, representing the above engineers, who informed him of the high record made by the brick and offering him the order for 200,000 refractory brick, including special shapes. These brick are to be used in the new factories of the American Beet Sugar Co. at Oxnard, Cal. The result of the test showed that the California No. 1 furnished stood a test of 3,090 degrees F., although only guaranteed to withstand 2,500 degrees. While the sample of the Crown Brand stood a test of 3,290 degrees F., although guaranteed to withstand 3,500 degrees. In other words, the California brick stood a test of close to 600 degrees more than claimed for it. The old saw, "A prophet is without honor in his own country," does not apply in the case of this company, for the Los Angeles Gas & Electric Corporation recently placed an order with it for 600,000 refractory brick, including thirty-nine special shapes, to be used in the new gas generators now being built and in repairing the old ones.

Common Brick

It is reported that the earnings of the Illinois Brick Co. for the first quarter of the current year were equal to between 3 and 4 per cent on the share capital. This is at the rate of from 12 to 16 per cent annually, and the stock now pays 4 per cent. Some of the directors of the company are known to favor an increase in the rate of dividends to a 6 per cent basis. The meeting for action on the semi-annual dividend will be held in June, and in due course the disbursement is payable July 15. This company recently purchased the Manteno (Ill.) plant of the Curtis Brick Co. It is located on the Illinois Central Railroad, forty-nine miles from Chicago. "The purchase was made out of the current funds of the Illinois Brick Co.," said President William Schlake: "It is not a large plant, and the deal was easily handled without adding to the fixed capital charges. This addition to our productive capacity was thought necessary because of the growth in the company's business."

Illinois Brick has now nineteen plants. Some disappointment was expressed by stockholders of the company because the purchase means an increase in the floating debt which may cause the expected increase in the dividend rate from 4 to 6 per cent to be delayed.

The Builders Brick Co., W. T. Houlihan, manager, 527 Pioneer building, Seattle, Wash., has the contract for supplying the common brick and partition tile for the 42-story L. C. Smith building being erected in that city; also the brick for the Sisters' hospital at North Yakima, Wash., requiring more than a million brick.

C. A. Palmer, whose office is in the Oliver building, 141 Milk St., Boston, Mass., wants to enter into correspondence with manufacturers of common brick who have plants in New England.

Wolters brick yard of Atchison, Kans., has started up for the season. The Nass yard will not be operated this year; cement and the demand for paving brick in buildings has cut into the soft brick trade, according to the Atchison Globe.

The officials and board of directors of the Chanute Brick & Tile Co., of Chanute, Kans., held the regular quarterly meeting recently in the office of the manager, B. F. McFarland. The plant is running full handed and is at present turning out 65,000 or 70,000 brick per day. The plant was shut down temporarily this winter while repairs were made, but immediately resumed operation.

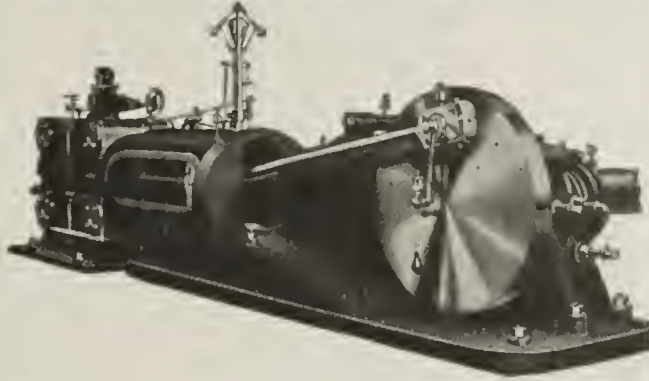
It is reported that the Arcadia (Kans.) Brick Co. has sold its plant to a Coffeyville company, and that the plant will be reopened.

The following is reprinted from the Iola (Kans.) Register of a recent issue:

The Independence Reporter the other evening had a story telling how many common brick plants had shut down in southern Kansas in the past few years since the price of gas has been advanced. Since then another plant, that at Moline, has asked for a receiver.

"The trouble is that the price of fuel is too high," a brick man said. "Common brick, such as are used in the inner walls of buildings, sell for about \$4.25 per thousand. With oil at 90 cents a barrel it takes about \$2.70 worth of fuel or three barrels to burn these brick. It costs fully \$1.75 to \$2 to manufacture them before they get to the kiln. So you can see that there is nothing left for the maker. When gas is eight cents it costs from \$1.60 up to burn the brick. Gas is cheaper than oil but it can not be had any more at 8 cents. It will cost from 10 cents up. Coal costs about \$2.50 per thousand brick, not counting the cost of han-

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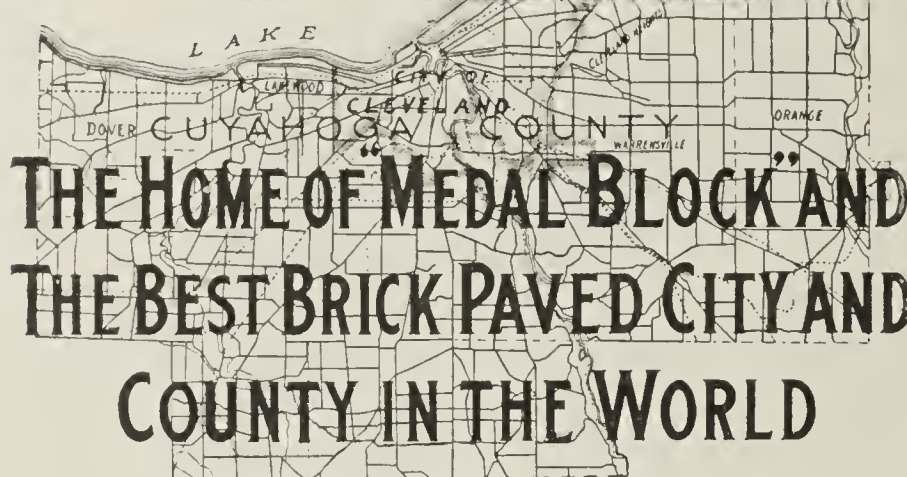
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dling it or of disposing of the ashes. Coal can be had cheaper at Kansas City than here, that's why common brick can be bought as cheaply up there as down here and that is why so many plants down here have gone out of business.

"With paving blocks the situation is better. The price on them has been held up to a profitable point. Not only that, but the shale for them is down here in this part of the state. They can be burned cheaper at Kansas City but the cost of moving the raw material up there would more than offset the saving on fuel."

The Red Brick Company, to manufacture common and building brick, has been formed at Williamson, W. Va., with a capital stock of \$15,000. The incorporators are Tom Blackburn, S. B. Jones and C. H. Whitescarver, all of Williamson, and Hoge Mason, of Bluefield, W. Va.

After a brief period of idleness, the plant of the Weston Brick Co., at Weston, W. Va., which is owned by Dr. George I. Keener, has resumed operation, working to capacity on common brick.

Encaustic Tile

For twelve years the Alhambra Tile Co. of Newport, Ky., has been manufacturing first-class tile and is, at present, specializing in faience mantel and hearth tile of no inferior quality, besides producing plain, embossed, dull finish enameled tile and terra vitrea. The plant is in operation the year round with about forty or forty-five men at work, producing between seventy-five and one hundred thousand tiles. Although the work is done for the most part by hand, the plant has modern steam equipment for machine work. The tile are dry pressed in a Heatherton burner dry press. From 30 to 75 sq. ft. are burned at one time in saggers of their own manufacture. They have three large down-draft kilns. The clays used are chiefly ball and white china, which is brought up from Kentucky, Tennessee and other southern states. All goods are shipped over the Chesapeake & Ohio, which runs along one side of the factory. The company has enjoyed a prosperous season and is optimistic as to the future. A catalogue is issued for the trade, which has mantel designs and color charts of a very superior order, and by these the consumer may see the exact shading before buying, as well as choosing a mantel design, which is of the very best style. They feature a clever device, which does away with the metal frames usually required. This is the Bull Nose tile corner and is one of their most attractive productions. The directors consist of Otto Wolff, president; Charles Tucker, vice-president; Martin F. Emeking, secretary-treasurer; Oscar Reimer and John F. Sheehy, who is superintendent and manager. A branch office is located at 37th street and Bush terminal, New York.

On account of the large number of orders for floor and wall tile waiting to be filled the New Brunswick Tile Co., New Brunswick, N. J., found it necessary to enlarge its plant considerably.

The Polish employes of the sorting room in the ceramic department in the Old Bridge, N. J., tile works struck for better and more equalized pay recently. They tried to interfere with those who had been put in their places, but were driven out of the room by the superintendent.

Contributions to this department are solicited. Co-operation on the part of our readers will be greatly appreciated in an effort to make this department interesting—EDITOR.

Sand-Lime Department

THE SAND LIME BRICK ASSOCIATION.

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In a paper read before the Annual Convention of the Sand-Lime Brick Manufacturers' Association, at Toronto, Can., recently, P. L. Simpson gave an interesting review of the industry, from its incipency. All of the various improvements and patents which have marked the advancement of the industry were discussed in an able manner, for Mr. Simpson has given much time to study and investigation of methods of manufacturing sand-lime brick, both in this country and abroad. His paper teems with valuable information. We regret that owing to limited space, we are able to publish only a portion of it as follows:

Thirty-two years ago a patent was granted in Germany to Dr. William Michaelis, which patent covered the following claim: "The hardening process and the combination of all modifications and all compounds of silica and calcium hydroxide at temperatures above 100 degrees Cent. in the presence of saturated steam, that is to say, high pressure." Thus in 1880, the discovery of the hardening process for sand-lime brick, by high pressure steam, was made, and like other inventions, it was suggested by antecedent processes and especially what was known as the Frederick Ransome process. It seems that Dr. Michaelis had great respect for the Ransome process and endeavored to collaborate with Mr. Ransome of England to make a commercial success of the product. But in this respect they were doomed to disappointment, although the product in itself was ideal, and the ordinary sand-lime brick as produced today, would not compare with it.

It is our duty in manufacturing sand-lime brick to combine the ideal in respect to quality with the practical and commercial.

The all-important question with us now is whether a calm review of the present status of the industry would lead us to believe that we have reached the ne plus ultra, and whether the manufacturers of sand-lime brick are stand-patters or

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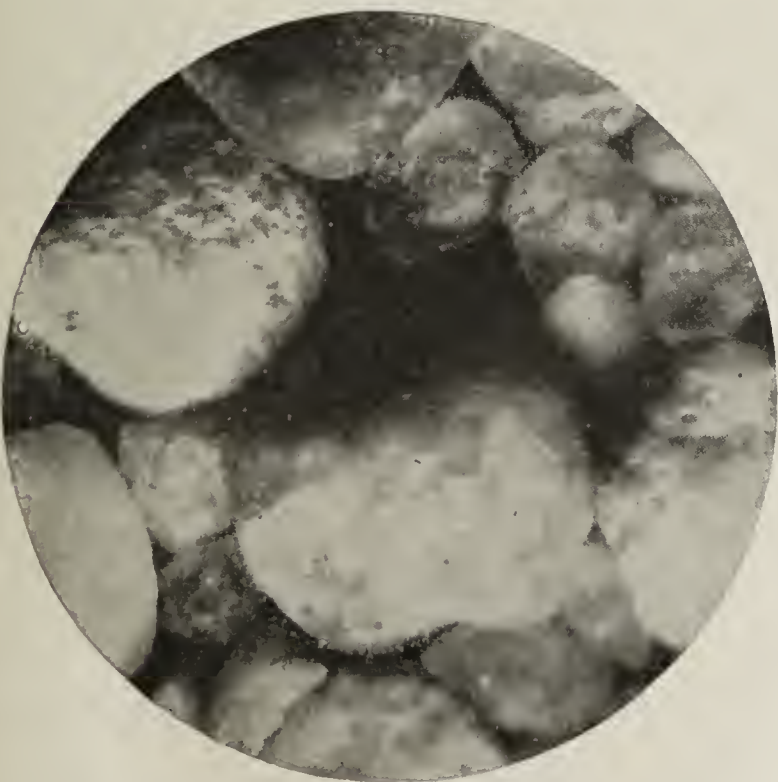


Fig. 1. Natural Sand Grain, Enlarged 40 Times.

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progressives. I trust that we may be infused with the spirit of progress that recently has had significant expression from the voters of this country in matters political, so that our minds may be ever on the alert for ideas looking to the betterment of our product, never forgetting the equally important parallel ideas of the practical and commercial.

Essential Conditions Outlined.

That we have made good progress in our methods of manufacture is undoubtedly true, but the proper spirit is never to rest content with what we have, but to look forward to still greater improvements in the future. In discussing some of the essential conditions necessary for a successful sand-lime brick plant, I may name the following:

In regard to the quantity this is easy to determine by an investigation of the supply and the probable market. This part of the business generally receives proper attention, but the all important question of the quality of the sand, is too often neglected.

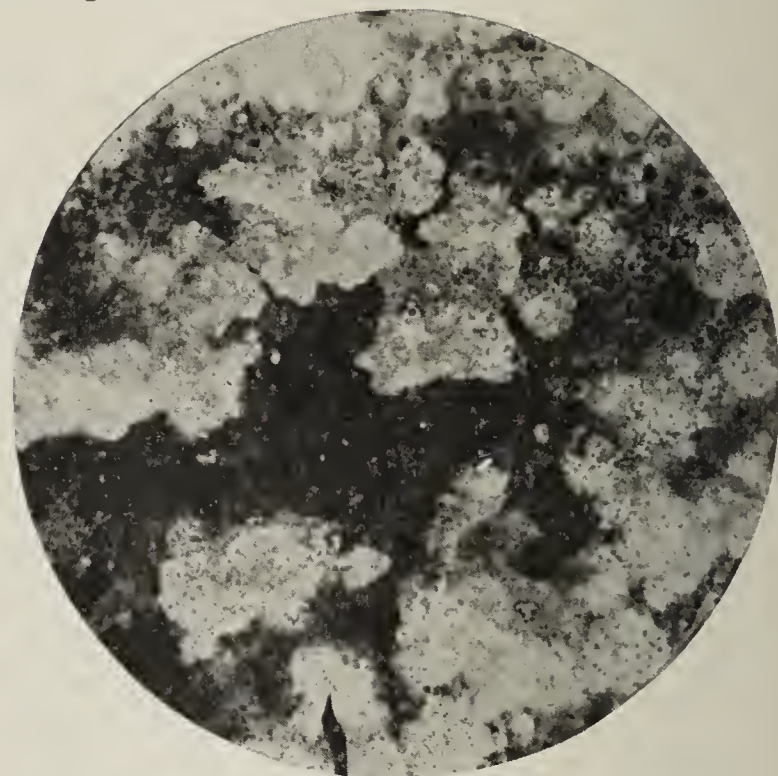


Fig. 2. Sand Grains Ground for Five Minutes in a Wet Condition, Enlarged 40 Times.

You will note that Dr. Michaelis in his experience with the Ransome process speaks of using sand "consisting of grains of various sizes." This feature is of great importance, as the voids or spaces separating the largest grains must be filled by the grains next in size, the ratio of sizes varying in some instances from grains of 30 to 40 mesh, to the almost dust condition of grain as fine as from 100 to 150 mesh. The chemical condition of the sand, is, of course, important, inasmuch as it should be clean and pure, because all the constituent parts other than the silica tend to hinder or retard the reaction with the lime in the hardening process. But the physical condition is of equal importance, inasmuch as it is principally refined sand over the size of 100 mesh that constitutes the binding agency, and it is this aspect of the subject that has suggested the use of the wet and dry grinding mill, and which has been the means of improving the quality of sand-lime brick to a wonderful degree.

It is difficult to fully account for the great increase in the average quality of sand-lime products by the introduction of this machine, because even when the sand is not long enough in the pan to materially grind a very appreciable quantity of it to fineness, yet the mulling itself seems to be of great benefit to the mixture. There cannot be any doubt, however, that the treatment of the sand, especially when in a wet condition, increases the plasticity of the mixture, and which may be accounted for by the partial pressing of one particle against another, thus pressing out as it were, the atmospheric air from the spaces, rendering the mass easier of being pressed into brick, the particles thus getting a much stronger hold, one on another. A partial grinding, even with a sand ideal in respect to variable size of grain is certainly of great value in improving the value of the product and which may be due in part to the resulting colloidal condition of the mass.

Cushman in his pamphlet entitled, "The Effect of Water on Rock Products," issued by the Department of Agricul-

ture as Bulletin No. 92, states as his conclusion that "the effect of wet grinding is to increase the binding power or cementing value of rock products and that the formation of colloids upon the surfaces of the particles would account for the increased binding power under the action of wet grinding." Cushman gives quite a number of photo-micrographs which clearly show the improvement of the mass due to wet grinding.

Wet Pan a Wonderful Improvement.

The sand-lime industry has been wonderfully improved by the introduction of the wet pan. In this country we expect the machine to do some grinding as well as mulling and mixing, whereas in Europe, at least in most of the plants that I had the pleasure of visiting, the latter function, viz., mulling and mixing, was all that was expected of the machine.

In several works in Germany that I visited, one 9-foot pan was used for two presses, each press turning out 25 thousand brick per day, while in one of the works in Scotland the mixture was put through a dry pan after coming out of the silo, without any additional water, and afterwards receiving its quota of water when being mulled in another pan, where it was finally prepared for the press, and this thorough preparation was used for the comparatively small production of about 17 brick 9 in. x 4½ in. x 3 in., the product being superior in every way, although such preparation probably would have been improved had the grinding and mixing been confined to one machine and instead of first mixing and grinding the material in the comparatively dry condition it is in as it comes from the silo, it had been ground wet, the plasticity would have doubtless been greatly improved.

Since the time in the first half of the last century, when a distinguished authority on molecular physics, Graham of Glasgow, used the expression "colloids," there has been a serious difference of opinion regarding the meaning of the word, some ascribing the phenomena to chemical action, while others to physical transformation, one authority asserting that colloidal action on rock products was simply due to the very fine grinding of the particles, the increase of such effect being largely augmented when finely ground in a wet condition.

Figures 1 and 2 are two microphotographs taken in the laboratory of the American Clay Machinery Co., by Hollis B. Crum. Fig. 1 shows the sand particles in their natural



Front View of a Sand Lime Plant Which Is Noted for an Almost Total Absence of Dust.

condition, while Fig. 2 shows the same ground in an agate mortar for five minutes in conjunction with water, both enlarged 40 diameters. You will note the definite change in the structure of the sand; in fact, its crystalline condition is transformed into a highly plastic condition and it is easily seen from an examination of these micro photographs why it is that the grinding and mulling of the sand vastly increases the cementing value of the mass.

Process of Slacking the Lime.

There are various processes for the slacking of the lime and its incorporation with the sand, especially those that have been adopted in modern practice.

My observations during a visit made to Europe last year convinced me that no modern plants were installing any form of pre-hydrate systems. Sand-lime engineers, especially in Germany, had reduced their practice to two systems: The Loesch-Trommel or hot silo slacking drum system, and the regular silo system.

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Brick and Clay Record

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In the first named, the process is substantially as follows: The slacking drum is a cylinder about 20 ft. long by 5 ft. at its widest diameter. It is strongly built with sufficient strength to withstand a pressure of at least 15 lbs. per square inch.

Some of them are provided with two openings but most of them are furnished with only one, located midway between the two ends and furnished with a heavy lid which is arranged so that it can be taken off and screwed on again with the greatest facility possible. It is provided with a steam gauge and safety valve, latter set to blow off at 60 lbs. pressure. A charge or batch is four cars of sand, each car containing about one cubic yard and first of all two cars are dumped into the cylinder by means of a funnel shaped hopper, the top of which is level with the track floor upon which the sand cars run. Then a car containing the proper quantity of lime for the entire batch of four cars of sand is dumped in and the lid securely fastened on; then the cylinder revolves, the speed being about 3 to 5 revolutions per minute. This goes on for a few minutes so as to insure a partial mixing of the lime particles through the sand, then a given amount of water is allowed to run into the cylinder, the latter all the time revolving.

Very soon the slacking of the lime begins and the steam arising from the reaction begins to show on the steam pressure gauge, which is closely watched. In case the steam gauge should fail to blow off at 60 deg. the pressure in that event is released by the opening of a valve, connecting with a pipe leading to the outside of the factory. Should there be a deficiency of steam pressure from the reaction of the lime with the water, then live steam at 60 lb. pressure to the square inch is let into the cylinder. After a certain time the live steam is turned off and the cylinder kept revolving about ten minutes from the time of starting.

An examination of the steam gauge during that time shows a gradual decrease in steam pressure after the live steam is shut off, this being due to the chemical absorption of the water or steam vapor with the lime. You will note that the slacking of the lime is taking place while the latter is being mixed with the sand and when about ten minutes has elapsed the lid of the cylinder is removed and the remaining two cars of sand containing one cubic yard each are dumped into the cylinder and again revolved about 30 minutes, or until the whole is thoroughly mixed, when the contents is dumped into a bin or small silo. The whole operation of preparing over four cubic yards of material or enough for 2,500 brick occupying about one hour's time. Of course the mixture is at this time in a hot condition, but the bin or silo is large enough so that before the mixture reaches the press it is sufficiently cooled off for the bricks to be handled without difficulty by the off-bearers.

The material is taken out of the silo or bin by automatic methods and elevated up into a wet pan where the mixture receives its additional amount of water to render it suitable for pressing.

The caustic lime is prepared by passing it through a rock crusher to break up the lumps, then elevated from same to a ball mill and from thence elevated to a sheet steel bin provided with slides at the bottom and from which the cars are charged to be emptied into the slacking drum. The lime was not finely pulverized, although it was admitted that finer particles would have been beneficial. The wet pan was provided with a quite wide muller and no attempt was made to do any grinding with it, in fact, but one pan was used for the production of two presses, therefore, all that was expected of the pans was the kneading or mulling of the mixture from the silo.

Amount of Labor Required.

Two men were sufficient to operate two slacking drums, the charging of one being accomplished while the other drum was slacking and mixing a batch. One man operated the pan. No attendants whatever were used between the operators at the slacking drum and the wet pan, the operations being automatic. One man attends to all the lime for the entire six presses which at 25 thousand for each would total 150,000 of brick.

As you may be aware an attempt was made to introduce the hot silo slacking drum process at Kalamazoo, Mich., but it appears it was not a success for reasons unknown to the writer, not knowing all the conditions incident thereto. The process is certainly a success in Germany and it is difficult to understand if conditions are the same, why it could not be made a success in this country.

The prevailing sentiment amongst sand lime engineers in Germany, the Mother land of sand lime brick is perhaps in favor of the straight silo process, although there is quite a strong advocacy of the Loesch-Trommel or hot silo process as above described. All other processes especially any form of prehydrate system being practically eliminated from serious consideration.

In regard to the kind of silo that is best to install, there is a wide difference between American and German practice. In the former they are almost invariably made of wood and require expensive conveyors both above the silo to distribute the material into the same and also similar arrangements underneath for conveying the siloed material to the wet pans for further preparation.

On all the processes so far developed, considering the subject from both its practical and scientific aspects, the straight silo system when properly installed according to the latest ideas and when properly managed is undoubtedly the most up to date process that exists today. It is true, of course, that it requires a lime high in calcium content and there cannot be magnesia in its composition greater than from 3 per cent to 4 per cent. The less magnesia there is in the lime, the better it is for the silo process, but as a matter of fact it is necessary for all processes to have a lime high in calcium, regardless of the method of hydration adopted.

The preference shown by the writer for the silo system in this paper is based on a number of fundamental considerations.

I have spoken of the importance of the caustic lime in the silo system being fully ground and properly mixed before being deposited in the silo and it is therefore pertinent to compare the physical condition of the mixture at this stage with a mixture of sand and lime prehydrated. In the case of the silo system, fine grains of caustic lime adhere to the sand particles, which is also in contact with the water contained in the sand, then when chemical action begins these minute grains of caustic lime swell and burst to two or three times their original bulk.

The heat generated in the hydration of the lime is entirely lost when the prehydrate system is used, whereas the heat generated in the silo due to the hydration of the lime in the sand increases the colloidal condition of the sand particles, which condition is not destroyed in the subsequent cooling of the mixture. It would seem that this is one of the strongest arguments in favor of the silo system.

Another point in favor of the caustic lime silo process and against the prehydrate system is the impossibility of automatically proportioning and feeding hydrate of lime. Attempts have been made to devise apparatus by which this could be accomplished, but all to no purpose.

In this country, a prehydrate system is now in use in some plants, which was developed by the genial and energetic secretary of our association, which is a modification of what was known at one time as the Dodge System of Hydration, whereby, the lump caustic lime is hydrated by water and emptied into close concrete or brick bins where it is allowed to lie until it is fully hydrated. This process has the advantage of simplicity and comparatively low first cost, but in all its essential aspects it is un-scientific and not in accord with the best practice where research into the fundamental principles of the business has received its greatest impulse.

Such a process is not possible without the wet pan and even then it is difficult to believe that the conditions which secure the highest cementing value can be compared to the silo systems herein discussed.



Rear View of Sand Lime Plant Operated as Described Above.

The "Martin"

BRICK MACHINERY








Soft-Mud or Stiff-Mud Processes

Get Our Plans

Dry or Wet Grinding Pans

Barrows and Trucks

Disintegrators

Clay Cars--Dryer Cars

Hoisting Drums

Modern YARD SUPPLIES






The Henry Martin Brick Machine Mfg. Co.

GET MARTIN PRICE LIST



LANCASTER PENNA. U. S. A.

GET OUR BIG CATALOG



PHILLIPS & McLAREN CO.

PITTSBURG, PA.

Builders of Pittsburgh Standard Dry and Wet Grinding Pans, Rock and Ore Crushers

For **BRICK, CEMENT, TERRA COTTA** and All Kinds of **REFRACTORY MATERIALS**

When writing for Prices, state kind of Material and Capacity

Eastern Sales Office: Stephen Girard Building, **PHILADELPHIA, PA.**



Chase Improved Flexible Bearing Folding Deck Dryer Car

See this car before placing your order.

We also manufacture a full line of Side Dump, Bottom Dump and General Purpose Cars, Transfer Cars, Turntables, Switches, etc.

The Chase Foundry & Mfg. Co., Columbus, O.



The Superior Quality of

"INDUSTRIAL CARS"

is the

result of many years of practical experience and there has been no branch of clay manufacture in which they have not been placed in service.

The investment demanded for the best possible car for your plant requires careful investigation.

The Industrial Car will be your first choice and the one eventually purchased. The manufacture of dryer cars is only a small part of our line. We have a car for every need.

Write for our catalog and let us submit an estimate for the coming season's requirements.

Electric Locomotive & Car Co.

Successors to The Industrial Car Co. and The Cleveland Car Co.

West Park, Ohio

Terra Cotta

N. Clark & Sons are making rapid progress with the improvement of their plant at Alameda, Cal., which includes a new 3-story building. They are working on many contracts, in which a wide variety of their lines of brick and terra cotta are used, at various points on the Coast. They have several jobs at Los Angeles, and have just completed deliveries on one large building at Portland, Ore., where they are starting on the new Morgan building, Doyle, Patterson & Beach, architects.

The entire second floor front of the Arcade building, Seattle, Wash., is being remodeled by the use of cream matte glazed terra cotta, pilasters and elliptical arches. The same material also is being used in replacing the old entrance to the building. The Denny-Renton Clay & Coal Co., Seattle, is furnishing the material. Much favorable comment is being heard from architects and contractors generally upon its excellent quality.

The American Terra Cotta & Ceramic Co. of Crystal Lake, Ill., is making a great expansion in its business and has made arrangements with some of the leading terra cotta experts in the east to take over the management of the plant and the business end of the company, with the intention of making this one of the largest and strongest terra cotta concerns in the country. The company has been working out this plan for some time, and to that end recently increased its capitalization in order to provide capital for expansion. The capital of the company was formerly \$500,000. The earnings of the company have been such for a number of years past that good dividends have been paid on the stock each year, in addition to a large amount being put back into the upbuilding of the plant. Recently the capital was increased to \$700,000 by the issuing of \$200,000 preferred stock, on which the company guarantees to pay 7 per cent annually, with the privilege of retiring this stock at any dividend paying date at 110. This stock is being sold at par, and quite an amount of it has already been placed in Chicago. The stock of this company has never been on the market and has been held almost entirely by the Gates family. The ownership of the common stock remains practically as it has been in the past, but the new stock is given the first preference as to security and earnings over the common stock. It is not the intention to issue all of the stock at present, but to put it out only as the funds are needed for the development of the plant, in order to take care of the increased business. Already plans are under way for the building of more kilns and for changes in the factory that will permit of increased output at less expense. It is the intention of the new management to concentrate as much of the work at the local plant as possible, and to that end the draughting department will be sent out from the Chicago office to the local one. The number of employees will be rapidly increased, and it is expected that the pay roll, which has now been running at about \$200,000 a year, will the coming year be \$300,000. The company is now employing about 225 men, and as soon as extra kilns can be built and the factory put into shape to accommodate them, the number will be increased to at least 300, and it is expected that eventually, probably within five years, there will be 600 or 700 employees.

It is the desire to make this department not only instructive but newsy and the co-operation of our readers is asked. Send in any little items of interest or suggestions that may benefit someone.—THE EDITOR.

Machines and Equipment

The pinion, shown in the accompanying illustration, together with others of the same make, made from the "Stag" brand manganese steel, was used for driving conveying machinery, and was in continued operation for over 25½ months, while the average service given by cut steel pinions under exactly the same conditions, is said to be only three weeks.



Pinion Made from "Stag" Brand Manganese Steel.

That the metal was wonderfully tough is unmistakable. Note that even though worn down very thin the teeth did not break. While it is not good practice to wear out a pinion to the extent shown, this is an example which is characteristic of the wonderful economy which results from using good manganese steel.

The Edgar Allen American Manganese Steel Co., of Chicago, Ill. and New Castle, Del., makers of the "Stag" brand manganese steel, are turning out and selling many hundred tons of castings per month in the form of gears, pinions and other heavy service equipment, which fact demonstrates the extensive approval and adoption of this metal.

New Type of Pulley.

Those who have had trouble with set screws in pulleys will be glad to know that iron split pulleys are now being made without set screws and with the bushings split ready to put on the shaft by the Dodge Mfg. Co., Mishawaka, Ind.

Many tests, under actual working conditions, have demonstrated that the pulley is held fast to the shaft with absolute security by compression alone. The hub bolts are large in diameter and the clamping power therefore is much greater with these pulleys than with any other type. This makes set screws unnecessary and as they are an element of danger, projecting as they do from the hub, they have been in the interest of safety and efficiency eliminated.

Ricketson's Mortar Color Exhibit.

"Eighty per cent of the colors used by manufacturers exhibiting in the Clay Show are Ricketson's."

This statement was made on a placard at the booth of the Ricketson Mineral Paint Works at the recent Clay Products Exposition and is indicative of the high regard the clayworkers have for these colors.

The Ricketson Company had quite an attractive exhibit

Write Us for list and discount on

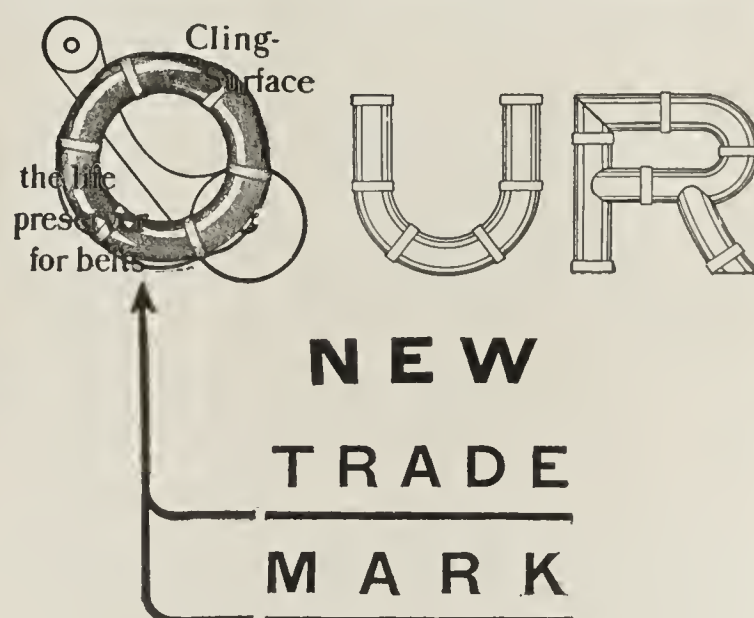
Sawyers' Red Canvas Stitched Belt

The best belting made for Conveyors and Driving. We sell Rubber Belting, Packing, Hose and everything else in the rubber line.

We are the sole distributors of "Sawyers" in Chicago. What do you wish prices on?

Chicago Rubber Co.

218 W. Madison St., Chicago



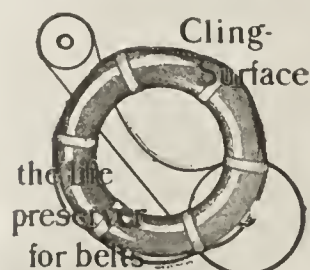
This mark will now appear on the label of every package of genuine Cling-Surface. It symbolizes two benefits assured by systematic Cling-Surface treatment.

First, the preservation of the belt or rope fibres due to the food value of Cling-Surface in replacing spent natural ingredients, and in resisting climatic changes, moisture, steam, etc.

Second, the economic advantage of slipless belts and ropes run slack, as made possible by increased pulley contact arcs and the "cling" imparted by Cling-Surface to the belt face or rope surface.

Cling-Surface owes its success largely to penetrating and lubricating qualities. Instead of making the belt sticky, it leaves the surface soft and clean and makes the interior flexible.

Send us a trial order for Cling-Surface and we will send you valuable literature on the care of your belting and ropes.



Cling-Surface Company
1029 Niagara St Buffalo N Y
New York Boston Chicago
Denver Atlanta Memphis etc

To Prevent Scum Appearing on Your
Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

Literature on Application

Other High Grade Chemicals For
Clay Industries

**The Roessler & Hasslacher
Chemical Company**

100 Williams Street, New York

SECOND REASON WHY

“NESTOR”

IS UNEXCELLED FOR
BRICK PLANT WORK

ALWAYS PLIABLE, FLEXIBLE,
NEVER BECOMES HARD
LIKE A BOARD

DO YOUR BELTS CONTAIN
THIS FEATURE?

The American Fabric Belting Co.
Cleveland, Ohio

of its colors, both in the crude and manufactured state. The colors also were shown mixed to produce various shades for stucco work.

The exhibit was strengthened by neatly printed placards, some of which follow:

Here's a place to rest. Our chairs are good for that tired feeling. Our mortar colors are the best in the world for tinting brick, mortar, tile, concrete and stucco.

From the raw materials to the finished product. Highest grade Lake Superior ores backed by over a quarter of a century's experience in manufacture. No wonder Ricketson's colors are the best.

Look at the colors used in this Show. Pleasing and effective and over 80 per cent of them are Ricketson's. There's a reason.

The Ricketson Company is located in Milwaukee, Wis., and is one of the largest manufacturers of mineral colors in the United States.

Chaldean Members

(Continued from Page 757).

- | | |
|---|--|
| 379 Willis, W. H., Cincinnati, O. | 387 Wagstaff, A. H., Toronto, Can. |
| 380 Walters, Carl C., Columbus, O. | 388 Warner, Franz. |
| 381 Woodward, Chas., Oak Park, Ill. | 389 Whitney, Victor, H. |
| 382 Wilson, J. R., Corsicana, Texas. | 390 Wilson, Wm. E., Mason City, Ia. |
| 383 White, Frank, A., Easton, Md. | 391 Wever, Donnelly, Cincinnati, O. |
| 384 Wynn, H. T., Trafford, Pa. | 392 Supple, Guy J., Danville, Ill. |
| 385 Wood, Frank, W., Indianapolis, Ind. | 393 Snowden, Geo. E., New Cumberland, W. Va. |
| 386 Walsh, J. R., Toronto, Ont. | 394 Kuhelmann, A. R., Toledo, Ohio. |
| 387 Wheat, G. G., Cambridge, Mass. | 395 Baird, O., Parkhill, Ont. |
| | 396 Votaw, H. J., Plymouth, Ohio. |
| | 397 Zeller, D. H., Brazil, Ind. |

There are several applicants for adoption whose names do not appear in the above list because there is no record of the payment of the initiation fee. These are urged to correspond with the Keeper of the Tablets.

CHALDEAN BUTTONS AWAIT ORDERS.

Designs Have Been Completed and Choice Made of Emblem of New Secret Society.

The special committee appointed by the Supreme High Priests has made its selection of the emblem button for the Ancient Order of Chaldeans and a reproduction of the same is shown herewith, the size being exact—half inch in diameter.

The button is said by many to be one of the prettiest and most distinctive indorsed by any of the lodges. Of course the sacred man-headed winged bull occupies a prominent place on the button as do the Three F's. The button is to be made in two grades—solid gold and rolled plate. The field is in white enamel and bears the name of the Order in gold letters. The bull and the Three F's are in gold on a blue field.

The rolled gold buttons will cost \$1 each and the solid gold buttons \$1.50, and it is necessary that some idea be had of the quantity that will be required before the order is placed for their manufacture. The buttons are of special design, requiring new dies and tools to make them. In view of these facts it is urged that all desiring buttons make known their desires at once. Write to the Supreme Keeper of Tablets at once stating which button is wanted.



Freight Tariffs

No other single item of cost affects the selling price of brick and other clay products as the freight that must be paid when the material reaches its destination. Brick, for instance, selling at \$10.00 to \$12.00 per M at plants in Ohio, pays \$4.95 per M to Chicago and \$9.00 per M to New York.

Freight rates limit the market to a certain well defined radius, and unless a manufacturer is willing to "equalize the freight preferential" of some competitor located nearer a desired market by cutting his own selling price he must be content to see building booms come and go without giving him any share of the demand.

Every time a tariff applying to the commodity you make is changed, it has a direct bearing upon your business prosperity, for it may enable a competitor to invade some of your pet territory or you to invade some of his. The advantage will accrue to you or to your competitor, as the case may be, in exactly the proportion of your ability, or his, to take advantage of the change. The railroad companies comply with the law when they "publish" the tariffs—tariffs so puzzling that only an expert can read them—sent only to shippers who make a point of applying for them.

When you depend upon rates as given you in any other way other than through the printed tariffs or reports of Interstate Commerce Commissions, you lean upon a slender reed, for errors are made by railroad employees, many of whom are as inexpert at tariff reading as, perhaps, you yourself are. Quotations based on erroneously high rates lose business, while business taken on quotations based on erroneously low rates nets a loss. *You are responsible for quotations based upon freight rates given you by railroad employees; these rates, even though given you in writing under the signature of a railroad official, carry no responsibility to the railroad company.*

For some months past, "Brick and Clay Record" has published a list of the changes in freight rates, as they applied to brick and other clay products. We urge a careful perusal of this column, issue by issue, and a close following of the articles on freight changes which we will publish from time to time. When any freight problem puzzles you, write us and we will do what we can to enlighten you, although many questions will remain questions until the railroad experts themselves succeed in straightening out some of the tangles which now enmesh them and the men upon whom they depend for business.

The following changes have been made since our last issue and are all in effect May 1st with one exception, which is noted:

From HURON LAKE, MINN., to Aberdeen, S. D., brick (except bath and enameled), fire, paving and pressed brick, fire clay, fireproofing and articles taking same rates, 11c, and drain tile, 12c.

From HURON LAKE, MINN., to St. Paul and Minneapolis, Minn., brick (except bath and enameled) and articles taking same rate, 5c, and drain tile, 6c.

From DES MOINES, IA., to Level Siding, Crooks, Lyons and Colton, S. D., brick and drain tile, 12c.

From DES MOINES, IA., to Watertown and Thomas, S. D., brick and drain tile, 13c.

From MASON CITY, IA., to Level Siding, Crooks, Lyons, Colton and other South Dakota points, drain tile, 11½c.

WATCH THE BUCYRUS DIG!



18B Bucyrus Shovel, 7-8 Yd. Dipper, Bloomfield Clay Co., Perth Amboy, N. J.

BUCYRUS REVOLVING SHOVELS

are especially adapted for brick-yard requirements. They may be mounted on car wheels or traction wheels. For plants of 125,000 bricks capacity or less. They can be operated by one man. Think the of saving in labor costs and troubles! They may be operated by steam or electricity.



BUCYRUS COMPANY

South Milwaukee, Wis.



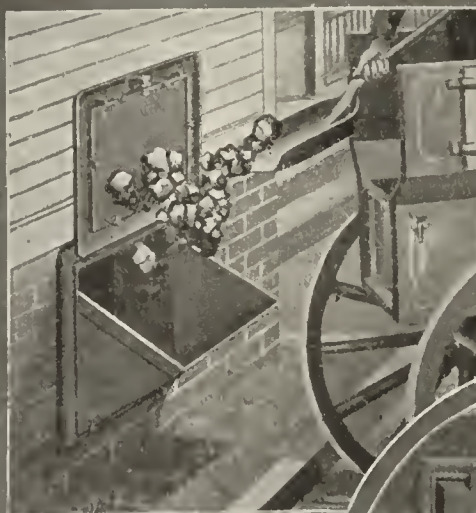
New York
R-30-1

Chicago

Duluth

Birmingham

MAJESTIC FOUNDATION COAL CHUTE



Protects the building just where most needed—above the opening.

The heavy steel hopper catches all the coal.

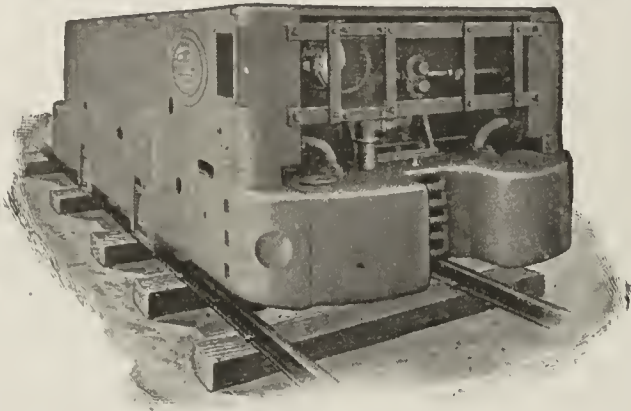
When not in use, the hopper lies in the bottom of the chute body. The door locks automatically either open or closed. Strictly burglar-proof. With ¼-inch wire glass or steel panel in door.

Write for circular and address of nearest dealer.

MAJESTIC FURNACE CO.

Huntington, Indiana

Gasoline Haulage Motors



UNDERGROUND TYPE.

Over 30 different companies using these motors for their main haulage.

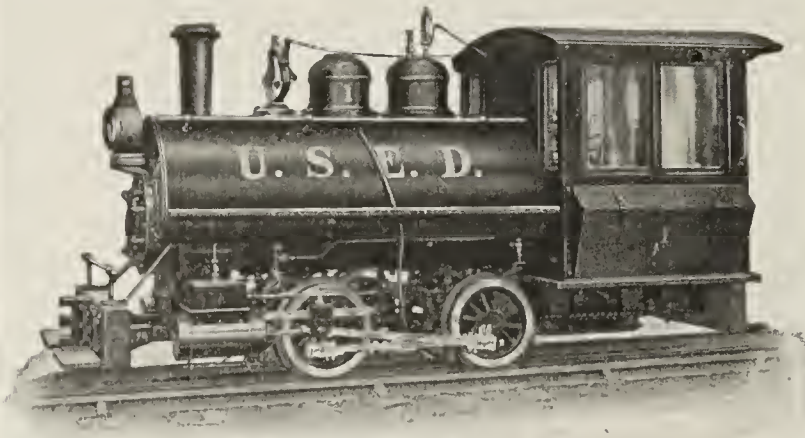
Write for Bulletins.

GEO. D. WHITCOMB CO.
Rochelle, Illinois

CLAY HAULAGE

Reduce costs of transportation by using a

Davenport Industrial Locomotive



Small Size—Reasonable Cost—Especially built for use of clay-products manufacturers', for hauling clay or shale from pits or mines to plant.

Cheaper Than Horse Transportation and will reduce costs of delivering your material to your plant, thus increasing profits.

All About Modern Industrial Railways

Write us for particulars

Davenport Locomotive Works
Davenport, Iowa

BRANCH OFFICES: St. Louis: 654 Pierce Bldg.
Chicago: 12 and 14 So. Canal St. St. Paul, 1308 Pioneer-Press Bldg.
Seattle: 617 Western Ave. New York City, R. 2052 Grand Cen. Term. Bldg.
Canadian Representative: F. H. Hopkins & Co., Montreal, Que.

From DULUTH AND ST. PAUL, MINN., to Winnipeg, Man., brick (building or paving, pressed or hollow), also hollow building tile, 15c; enameled brick, 25c; fire brick and fire clay, 19c.

From AUBURN, BAY CITY, PAINES AND SAGINAW, MICH., to Gaylord, Mich., brick, clay, tiles and articles taking same rates, \$1.10 n. t.

From BLACK ROCK, BUFFALO AND SUSPENSION BRIDGE, N. Y., to Gaylord, Mich., brick, clay, tiles and articles taking same rates, \$2.40 n. t.

From ROANOKE AND SALEM, VA., to Danville, Va., building brick, \$2.40 per M brick.

From ST. LOUIS, MO., to Axtell and Macon, Mo., brick and articles taking same rates, \$1.50 n. t.; to Fort Blees, \$1.45 n. t.; to Excello, \$1.45 n. t.; to Jacksonville, Mo., \$1.25 n. t.

From MOBERLY, MO., to Axtell, Macon and Fort Blees, brick and articles taking same rates, 75c n. t.; to Excello, 70c n. t., and Jacksonville, Mo., 65c n. t.

From MOBERLY, MO., to Jacksonville, Mo., building and paving brick, 55c n. t.

From MEXICO, MO., rates on brick and articles taking same rates, to Axtell, 95c n. t.; Macon, Fort Blees and Excello, 90c n. t., and to Jacksonville, Mo., 85c n. t.

From LEBANON, PA., to Jersey City, N. J., on brick bats, \$1.60 n. t.

From DARLINGTON, PA., to Lisbon, O., on building brick, 40c n. t.

From ZANESVILLE, O., to Cambridge, O., brick and articles taking same rates, 50c n. t.

From WASHINGTON, PA., to Dickerton Run, Pa., brick and articles taking same rates, \$1.20 n. t.; fireproofing and fire clay, \$1.30 n. t.

From AULTMAN, O., to East Greensburg, Pa., conduits, brick, fireproofing and fire clay, \$1.30 n. t.

From STONE CITY, COLO., on fire clay to Joplin, Kansas City and St. Joseph, Mo., 15c; to Bartlesville, Blackwell, Collinsville, Ponca City, Tulsa and Sand Springs, Okla., 17c.

From WEST SALEM, ILL., to Vincennes, Ind., common brick only, 75c n. t.

From MELMICK AND BOYNTON, OKLA., to Joplin, Mo., brick (except fire, bath and enameled), 7c. Note: This rate is not in effect until May 5th.

From ST. LOUIS, MO., to Vandale and Winne, Ark., on sewer pipe and drain tile, 15½c.

From MURPHYSBORO, ILL., on brick, paving brick and hollow blocks, to Sedalia and Kansas City, Mo., and Kansas City, Kan., 7½c; to St. Joseph, Mo., 8½c; to Jefferson City, Mo., 7½c; to Valley Park, Mo., 5c; to Lexington and Pleasant Hill, Mo., 7½c.

From CHICAGO, CHICAGO HEIGHTS, ILL., GIBSON YARD, HAMMOND, IND., JOLIET and KENSINGTON, ILL., on common brick only, to Gaylord, Mich., \$1.80 n. t.

From DEARBORN, DETROIT, JUNCTION YARD, SIBLEY, WARREN and WEST DETROIT, MICH., on brick other than common brick, to Gaylord, Mich., \$1.80 n. t.

From COFFEYVILLE, KANS., on brick to Pateau, Okla., 10½c.

From PITTSBURG, KANS., on brick to Webb City, Mo., 3½c.

From NEODESHA, KANS., on brick (except bath and enameled) and including fire clay and hollow building blocks, to Siloam, Ark., 8c.

From INDIAN ORCHARD, MASS., to Windsor Locks, Conn., rate on common brick, \$1.10 n. t.

From CHANUTE, KANS., to Blue Rapids, Kans., brick (common building and vitrified), conduits, brick blocks and articles taking same rates, 9¼c.

Westbound rates on brick and articles taking brick rates are—CHICAGO, ILL., to Rapid City, S. D., 31½c. DULUTH, MINN., to Rapid City, S. D., 31½c. PEORIA, ILL., to Rapid City, S. D., 31½c. SAVANNA, ILL., to Rapid City, S. D., 29½c.

From DES MOINES, CLIVE, RIDER, GRIMES, INGERSOLL, GRANGER and HIGH BRIDGE, IA., brick and articles taking brick rates, to Duluth and Wrenshall, Minn., 11½c. To St. Paul, Minneapolis and Minnesota Transfer, Minn., 8c. Rates apply in either direction.

From BLUE ISLAND and RIVERDALE, ILL., brick to Aurora, Carbon Hill and Coal City, Ill., 50c. To Coster, Ill., 60c. To Griffith, Ind., 50c. To Joliet, Ill., 50c. To Porter, Ind., 60c. To Rockdale, Ill., 50c. To South Wilmington and Waukegan, Ill., 60c. To West Chicago, Ill., 50c. Rates in this paragraph are all "per net ton."

From OSAGE, BUCKNAM, LITTLE CEDAR and DAVID, IA., brick and drain tile to Chicago, Ill., 10c. To St. Paul, Minn., 8c. To Faribault and Mankato, Minn., 8c. To Red Wing, Winona and Zumbrota, Minn., 6c.

From ST. LOUIS and EAST ST. LOUIS, brick and articles taking same rate to Zenda and Walworth, Wis., \$1.55 n. t. To Avolon, Wis., \$1.80 n. t. To Rockton, Ill., \$1.60 n. t. To Fechanville, Wheeling, Aptakisic, Prairie View and Leighton, Ill., \$1.80 n. t. To Burlington, Ia., \$1.40 n. t.

From FULTON, MO., brick and articles taking brick rates to Hannibal, Mo., \$1.10 n. t. To Keokuk, Ia., \$1.20 n. t. To Quincy, Ill., \$1.10 n. t.

From WHIPPANY, N. J., common brick to Easton, Pa., \$1.20 n. t. To South Easton, Pa., \$1.20 n. t. To stations Lucy Furnace to Allentown, Pa., inclusive, \$1.50 n. t. To Albutis, Emaus, Hancock, Kutztown, Mertztown, Philadelphia, Shamrock and Topton, Pa., \$1.60 n. t. To Skillman, N. J., \$1.65 n. t. To Aldine, N. J., \$1.50 n. t. To East Allentown, Pa., \$1.50 n. t. To Elizabeth, N. J., \$1.00 n. t. To Freemansburg, Pa., \$1.50 n. t. To German Valley, N. J., \$1.00 n. t.

From EAGLESWOOD, FORDS, KEASBYS, MAURER, METUCHEN and PERTH AMBOY, N. J., on brick of all kinds (except enameled) and on fireproofing, to Brooklyn, N. Y., stations, \$1.00 n. t.

From BISMARCK, N. D. (when originating beyond), brick, common, pressed or hollow, to Regina, Sask., 17c. To Saskatoon and Sutherland, Sask., 21c.

From COFFEYVILLE, COLUMBUS AND FORT SCOTT, KANS., to Blue Rapids, Kans., brick (common, building and vitrified), conduits, brick blocks and articles taking same rates, 10½c.

From GAS, HUMBOLDT, IOLA AND LA HARTE, KANS., to Blue Rapids, Kans., brick (common, vitrified), conduits, brick blocks and articles taking same rates, 9c.

From MOUND VALLEY, KANS., to Blue Rapids, Kans., brick (common, building or vitrified), conduits, brick blocks and articles taking same rates, 10¼c.

Brick of all kinds and clay to shipside at Galveston, Tex., Westwego, La., Mobile, Ala., New Orleans, La., and other Gulf ports (for export) from FULTON, MO., 19c; from MEXICO, MO., 18c; from OSKALOOSA, MO., 20c; from VERSAILLES, MO., 20c; from VANDALIA, MO., 18c.

Fire brick, special rates, from OSKALOOSA, MO., and VERSAILLES, MO., to shipside as above, 19c.

We have omitted the names of the roads and the numbers of the tariffs to which the above rates are amendments. In case any question arises as to the authenticity of any rate, full information may be obtained by application to "Brick & Clay Record."

Why Worry About Deliveries



Any driver can unload in one minute without damaging the brick if you use

The Martinsburg Brick Wagon

They slide out easily in a nice pile.

You increase the capacity of each team 30 to 50%.

We can refer you to users in every section who handle all kinds of brick.

AUBURN WAGON CO.

Auburndale, Martinsburg, W. Va.



THE OTIS

Tubular Feed Water Heater, Oil Separator and Purifier

is not an experiment but a tried and trusted appliance that the makers are not afraid to

G U A R A N T E E

To heat the feed water to the boiling point (210 to 212 degrees) with the exhaust steam without causing any back pressure, also to extract the oil from the exhaust, so that the exhaust steam after being passed through the heater can be used for other heating purposes, and the water of condensation for the heating system be returned to the boiler without the additional expense of an eliminator.

We are so sure of the OTIS that we agree to pay all cost of a trial—freight, cartage, piping, etc.—if it fails to do all we claim for it.

Catalogue and Prices at Your Service

The Stewart Heater Company,

33 EAST DELEVAN AVENUE . BUFFALO, N. Y.

Williams Wet Clay Grinder

This is the **ONLY** machine that will **GRIND** clay and shale direct from the bank at **ALL** times **WITHOUT CHOKING UP**.



ALL ADJUSTMENTS PATENTED

The Williams is manufactured and licensed under ninety-seven separate and distinct patents.

The Only Machine of Its Character Made

The hammers are adjustable and the position of grinding plates may be changed at will while the mill is in motion. This is done by a hand wheel on outside of machine.

The Williams is thoroughly steam-jacketed both front and back, including the hopper, top and bottom of machine.

**We Can Work Any Clay
That Will Make Brick**

Write for Complete Clay Catalog No. 18 with List of Users and Endorsements.

**Williams
Patent Crusher & Pulverizer Co.**

Factory: **St. Louis, Mo.** 2701 No. Broadway
Old Colony Bldg., **CHICAGO**
SAN FRANCISCO OFFICE, 347 Monadnock Bldg.

The News in Brief

The stiff mud plant of the Altoona Vitriified Brick Co., of Altoona, Kans., has been bought by the Wise County Brick Co., of Bridgeport, Texas, and will be moved.

Oscar Anderson has purchased the brick yard of Hunt Brick Co., at Sandpoint, Idaho. The clay pit consists of ten acres of fine clay deposit. The capacity of the plant is 30,000 bricks per day. Electric power will be used for operating and fifteen men will be employed.

The Granger Brick & Tile Co., of Granger, Wash., is furnishing the brick being used in constructing the high school at Prosser, Wash.

The Harper-Hill Brick Co., 125 Railroad Ave., South Seattle, Wash., reports that it is shipping about 500,000 brick a month to Vancouver, B. C. Other sources of demand are: A mill job at Everett, requiring 25,000 brick, also a mill job at Port Angeles. About 200,000 brick are being sent to Tacoma each month, and business gives promise of being very much better. The company has been making some extensive improvements including new track to the clay pit, sheet iron dryer shed and will put in a clay storage shed to hold about 3,000,000 brick.

The Northwest Brick & Lime Co., with plant near Everett, Wash., has started operations. The new plant recently constructed is practically double in capacity that of the old plant. A water system for protection against fire also has been installed.

The Chehalis Brick & Tile Co., of Chehalis, Wash., is engaged in making various improvements to its plant. One of the improvements is the putting in of a Klose continuous kiln. The kiln consists of seven chambers and has a capacity of 20,000 brick daily. It also is intended to install a four-tunnel car system. The company was recently reorganized, S. J. Saindon joining the force, while Messrs. Bickford and Burrows retain their interests.

The builder who constructed the one hundred and ten-foot brick chimney at Chippewa Falls, Wis., which attracted considerable attention, is preparing to build another in Nevada, which is also to be of brick and will be two hundred and fifty feet high.

At Austin, Tex., insurance rates on brick buildings have been cut from 70 to 50 cents; another argument for the use of brick.

Toledo, Ohio, brick manufacturers won a victory against the Pere Marquette Railway April 22, the Interstate Commerce Commission holding that the advanced rate on common brick in carloads between Toledo and Detroit, in both directions, were "found not to have been justified." The case was filed against the railroad by the Collingwood Brick Co., et. al., on March 6. In the petition the complainants assailed as unreasonable defendant's rates on common brick in carload lots from Toledo to Detroit, and asked that a reasonable rate be established for the future. For a number of years, except for brief intervals, defendant's rate on brick in carloads was the same in either direction between Toledo and Detroit, as shown by several tables accompanying the brief. Complainants contended that the advanced rate of 70 cents per ton was unreasonable to the extent that it exceeded the former rate of 60 cents. The testimony of the complainants was almost wholly devoted to an alleged discrimination in favor of John S. Haggerty, a Detroit brick manufacturer, who has a private switch connecting with

defendant's road about six miles from the business section of the city and on the line to Toledo. The Commission held that upon the record the railroad failed to justify the advanced rate, holding that 60 cents per ton is reasonable, and an order was entered prescribing such rate in the future.

J. Berre King, founder of the firm of J. B. King & Co., one of the leading building material companies in New York City, and of the New York Building Material Exchange, shot himself at Hampton Hall, Cranford, N. J., on Tuesday evening, April 22. Mr. King was born on Sept. 29, 1854, and was educated at Providence, R. I. He went to New York city with his brothers, Jerome A. and George R. King, in 1876 and founded the business which bears his name. He held certificate No. 5 as charter member of the New York Building Material Exchange, and was a member of the New York Yacht Club, the Metropolitan Club, the Downtown Association and of the General Society of Mayflower Descendants. He leaves two sons, one of whom is in Harvard and the other in business with his uncles at 17 State street, New York, and his wife and daughter, who are abroad. Mr. King had suffered from nervous trouble for a long time and during the last three years had taken little active part in business affairs.

Nicholas Mehrhof, of Hackensack, N. J., president of the Hackensack River Brick Manufacturers' Association, died March 31, in his eighty-fourth year. Born in Germany in 1830, he came to this country in 1844 and as a boy secured work in the brickyards of William A. Underhill, at Croton Point. He became superintendent, and finally proprietor. He went to Hackensack in 1877, continuing the same business at Little Ferry, a suburb of Hackensack.

Arthur L. Smith, a well known brick manufacturer of Greenfield, Mass., died recently from diabetes and kidney trouble. For a considerable number of years he has been engaged in the manufacture of brick.

The National Brick Co., of Montreal, Can., has declared a dividend. A bonus of 1½ per cent for 1912 and a 5 per cent disbursement for 1913 has been decided upon by the board.

The concrete walls of the sanitary canal at Joliet, Ill., have been examined by the trustees and found to be in a crumbling condition.

"Brick and Clay Record's" Classified Ads have such a reputation for securing results that Ads are even sent in to that department by telegraph.

The new plant of the Salisbury Brick Mfg. Co. of Delmar, Del., has been placed in operation and is turning out about 30,000 brick per day. The clay is taken from the pit to the plant on electric tramway.

Action for the dissolution of the Sterling Brick Co., of Marietta, Ohio, has been taken by the stockholders of the company. Suit has been filed asking for a receiver to convert the company's property into cash to pay its indebtedness. It is set forth that the company is solvent and that the plant is idle and has an indebtedness of more than \$9,500.

The yards at Coeymans, N. Y., are starting work outside, the mild weather having made the use of the steam plant unnecessary. Heavy frosts prevented brickmaking up to the middle of April and no outside work was attempted until the latter part of that month.

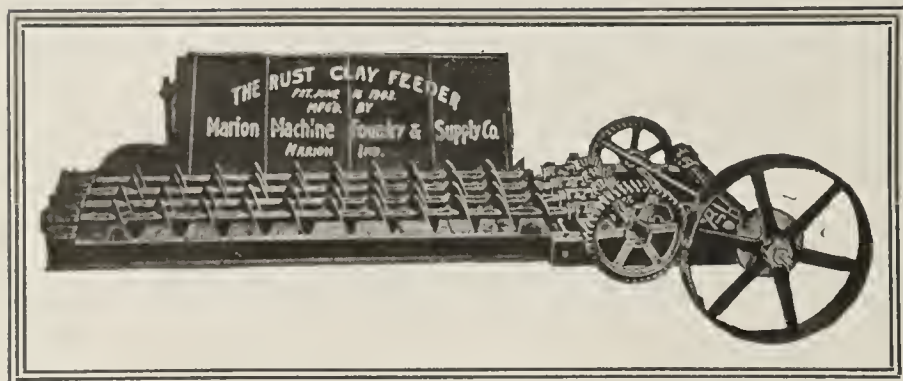
Tracks have been laid, connecting the machine room of the New England Brick Co., at Mechanicsville, N. Y.,

Are You a Member of The National Paving Brick Manufacturers Association ?

If not, your best interests demand an early affiliation with us. Write for our literature at once, and learn the amount of good we can do you.

WILL P. BLAIR, Secretary
**National Paving Brick
Manufacturers Association**

Locomotive Engineers' Bldg.
CLEVELAND, OHIO



The Rust Clay Feeder

The money-making clay plant is the one that has the labor-saving, time-shaving devices. No one machine offered the clay worker does more to save labor and time than the "Rust Clay Feeder."

We make the positive, unqualified statement that the Rust will save you \$500 in labor in one year, that it will cut your time, and that it will increase your capacity and improve the quality of your ware.

Shall we send you the PROOF?

The Marion Line

The same efficiency and service given by the Rust Clay Feeder is to be found in the other Marion machines.

THE MARION TENDER CLAY DRYER economizes in fuel and labor. It has several distinctive features through which it insures more rapid, more efficient and more economical drying of all clay products.

THE "ELI" AUGER MACHINES are made in a number of types to suit all needs, from the big "Eli" Special, which has a capacity of 100,000 brick per day, down to the little "Eli" with a capacity of 18,000 brick per day or 12,000 3-inch tile. There is also the "Eli" brick, tile and fireproofing machine, and the "Eli Jr.," the No. 1A and No. 2B.

COMBINED DISINTEGRATOR AND CONVEYOR—Capacity of 40,000 brick per ten hours, and only requires 12 h. p.

MICHIGAN DISINTEGRATOR—Made in a number of sizes and capacities, and is proving successful in many yards.

WINDING DRUM—Our self-contained friction winding drum is the best on the market for cableway holsting drums.

CAST IRON AND SEMI-STEEL CARS—The special construction insures long life and good service.

MARION CUTTERS—Three types for all purposes. These cutters are low in price and do the work right.

Marion Machine, F'dry & Supply Co.

P. O. Box 395
Marion, Ind.

with the clay bank. Dump cars containing the clay are started from the bank by horsepower and then cover the one-third of a mile journey by gravity. The same power as starts the cars is used to haul back the empties.

It is expected that the Diehl Brick & Tile Co., of Defiance, Ohio, will rebuild the plant, which was practically destroyed by the flood.

The Boyd Tile & Brick Works at Knob Noster, Mo., has installed a new 300 h. p. Corliss engine.

Logan G. Hughes, of Terre Haute, Ind., petitioned the Superior Court for a declaration of involuntary bankruptcy against the Wabash Brick Co., claiming that the company has outstanding claims of over \$20,000 and that he holds a judgment of more than \$11,000 against it.

Brick manufacturers in southern Kansas are having a hard time making both ends meet and, in some instances, failing to do so. The high cost of fuel seems to be the main trouble. Competition with Kansas City has kept the selling price of common builders down, while the cost of making has gone up to a point where the cost column foots up nearly as much as the sales. Paving brick are a better proposition, the shale clay being mostly in the southern part of the state. A meeting of several brickmakers was held at Independence, Kas., April 9th and the situation canvassed very carefully.

J. S. Cairns, one of the founders of the Washington Brick & Tile Co., of Seattle, Wash., died at his home at Chehalis, Wash., early in April. He had been a brickmaker for thirty-six years.

In the closing hours of the last Missouri legislature, the proposition of establishing a brick plant at the Jefferson City penitentiary was killed by being dropped from the appropriation bill.

Bricklayers' wages have been advanced in Greenfield, Mass., the minimum having been raised from 50 to 60 cents an hour. The 60 cent rate has been in force in nearby towns for some time and drew the better mechanics away from Greenfield.

Sheds and kilns are being dismantled at the Nonnemacher Brick Co. plant at Allentown, Pa. There is an abundant supply of clay on the site, but the land has become too valuable to continue it as a brick plant, owing to its being a part of a desirable residence section. Wm. A. Hausman, who operated the Nonnemacher Works for twelve years, will retire from the brick business, and devote his time to real estate development.

A dividend of 1 per cent was declared on the preferred stock of the Baltimore (Md.) Brick Co., payable May 1st to holders of record April 21st. The stockholders met in Wilmington, Del., early in April and elected T. W. Claggett, C. Hammond Cromwell, Douglas H. Gordon, J. G. Gray, J. William Middendorf, Saml. C. Rowland, Carroll Van Ness and L. S. Zimmerman to the directorate.

Plans are being prepared for a new brick plant to be built at Cumberland, W. Va., Ballantyne Bros., Albert Brown and W. Arnold, all of Cumberland, being in control. Over \$50,000 was paid for the property, consisting of clay mines producing material especially adapted for paving brick, fourteen kilns, dryers and other appurtenances at Empire, Ohio, and a complete clay grinding plant at Irondale, Ohio. The new factory will be put up at a cost approximating \$40,000 and it is proposed to employ about seventy men at the outset.

It is reported that the brick plant now located at Davenport, Okla., will be moved to Cushing, Okla., to

be in closer relation with the shale deposit at the latter named place. Cheap gas and a good demand for common brick makes Cushing a good place for a brickmaker to consider.

The old chemical factory at Lowell, Mass., has been converted into a brick and tile factory and is now in full operation.

Money has been tight during the past month and as a result the amount of business done by Chicago material men has not been altogether satisfactory. The open winter made the first quarter of 1913 a great improvement over the same period in 1912 and April sales must have fallen very much below April of last year if the net results for the first four months do not still show a satisfactory increase, 1913 over 1912.

Face brick prices, so far as the Chicago market is concerned, are "away off" and this condition is far from satisfactory to the parties vitally interested—the dealer and the owner. The only party benefited is the contractor, who, having figured at a certain price and secured the contract now finds he can, by shopping around, get a little better figure than that he originally calculated upon paying. The factories are all busy and the brick stocks are low, so cut prices do not mean better prices at the works. The dealer—the man who sets the price—is the sufferer.

T. S. Mann, secretary of the Pacific Stoneware Co., Portland, Ore., has been appointed a member of the recently created Bureau of Mines by Gov. West. The law creating this bureau provides that it shall make a study of the mineral resources of the state, with especial reference to their economic products. A more detailed study of the road making materials with reference to their character, distribution and the cost methods of utilizing them, and an investigation of clays, limestones, shales and fuels, is to be made. Information obtained is to be given widest publicity by the bureau.

Through an error, we made note in our last issue of the recent incorporation of the Van Daver Clay Products Co., of Houston, Tex. This was a reorganization of Vandever-Stoy under the corporate name of the Vandever Clay Products Co.

The Hydraulic Press-Brick Co., of Chicago, has purchased a new six-ton Mogul motor truck for local deliveries.

The Orenstein-Arthur Koppel Co. has moved its general offices from Pittsburgh to Koppel, Beaver Co., Pa.

A. Eugene Michel and Staff, advertising engineers, have removed from 21 Park Row into larger offices, Rooms 1001-7 Woolworth Bldg., New York.

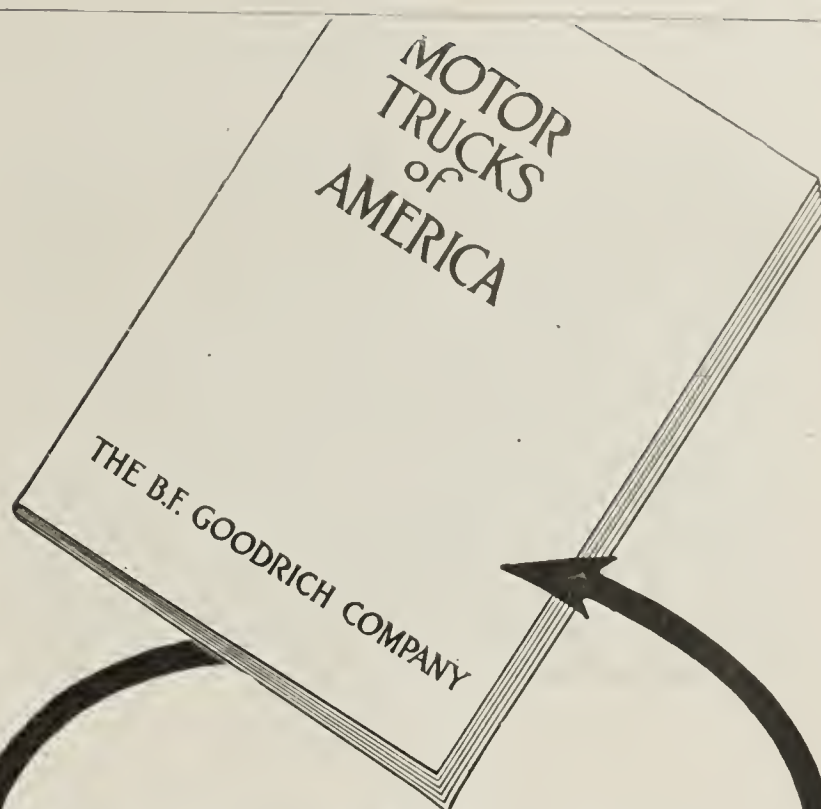
The Barbourville Brick & Tile Co., Barbourville, Ky., resumed operations April 16th, giving employment to over fifty operatives. This plant was put out of commission by the recent flood, but the damage, aside from the suspension of operations, was trivial.

Business is rushing in North Dakota. A correspondent in Dickinson writes us that the local plant is running a "night and day gang" to catch up on the orders.

New York has no monopoly on palatial residences. Truman S. Newberry is having plans prepared for a modest little home at Grosse Pointe—a Detroit suburb—which will cost over \$500,000.

Several strikes have been reported in Denver, Colo., where brickmakers in the yards of the Denver Pressed Brick Co. and the Colfax Brick Co. laid down their tools and walked out, having been refused an increase of 25 cents per day. The men have been receiving \$2.00 to \$3.50 per day and demand a flat increase.

A suit brought several months ago, against the Penn-



This valuable handbook free to those interested in motor trucks

Here is the most valuable handbook ever published for the man interested in motor trucks. Gives photographic reproductions, specifications, and the essential features of over sixty American-made motor trucks. It is issued by the makers of

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If you are responsible for deliveries, no matter whether or not your firm is now using motor trucks, you should have a copy of this book. Write today, addressing us on the business stationery of your firm.

The B. F. Goodrich Company

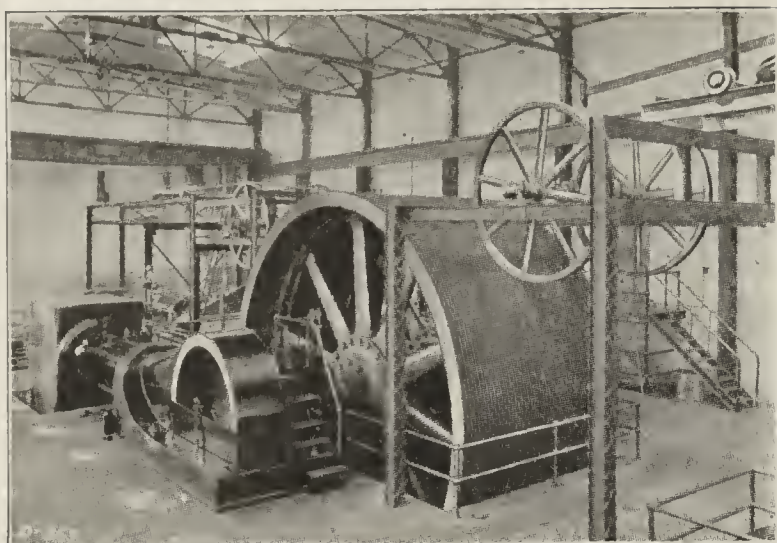
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A Dodge Rope Drive Job, Designed, Made and
Installed By Dodge Engineers

Most Power for the Least Money

DODGE rope drives are operating successfully in many clay working plants, transmitting power economically under all sorts of conditions. Some of them have solved difficult transmission problems and represent important engineering achievements. There are Dodge drives working between centers as distant as 700 feet, and between centers as short as 10 feet—indoors and outdoors.

Rope drives properly designed possess the flexibility and elasticity required for main drives where the load is fluctuating; for driving at angles; and over or around obstacles, and they are positive in transmission, free from electrical disturbance and low in first cost and in maintenance expense.

Our experiences of 28 years and more have been compiled in book form. They make interesting reading for managers, superintendents, master mechanics and chief engineers in the clayworking industry. We will be glad to send the book free for the asking. A request today brings the book tomorrow.

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Power Transmission Machinery
Mishawaka, Indiana

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Philadelphia 815 Arch St.	Boston 137-139 Purchase St.	Cincinnati 126-128 W. Third St.	Atlanta 28 S. Forsyth St.
Pittsburgh 337 Second Ave.	Chicago 208-214 So. Clinton St.	New York 21 Murray St.	Minneapolis Cor. First Ave. No. & 3rd St.
	St. Louis 408 N. Fourth St.	Portland, Ore. 14th & Lovejoy Sts.	

sylvania Company and the Baltimore & Ohio Railroad, in which the complainants were Wooster (Ohio) brick manufacturers, resulted in a complete victory for the brick men. The cause of action was the refusal of the two roads to establish an interchanging switching arrangement at Wooster, so enabling local shippers to use either road without having to pay switching charges. One brick company reported shipments of from 350 to 550 cars of brick out and from 100 to 200 cars of coal in, per year.

The Hebron (N. D.) Fire & Pressed Brick Co. has opened offices in Fargo, N. D., where Mr. Colburn will be in charge.

A new tile plant will be started shortly at Centre Junction, Ia., under the management of Thomas Dawson.

Hint for Unhappy Clayworkers.

A brick and tile plant, owned by H. Luhrs & Co., of Carson City, Nev. (near Reno), is running full time and needs additional skilled workmen.

New York Plants Open Season.

New York, April 24.—Some of the North river common brick plants resumed operations this week, chief among them being the William K. Hammond plant, the Dennings Point Brick Works and the Excelsior Brick Company. By the first of May practically every one of the 110 plants in the Hudson river district will be in operation and, if weather conditions prove favorable, new brick will be coming into this market in about six weeks.

The demand for common brick here is very light. The cargo arrivals at the West 52nd street wholesale docks during the last two weeks totalled 45 on April 19, and 60 on April 12, as against 38 sold on April 19 and 51 sold on April 12. In the corresponding period last year the arrivals were 82 on April 13 and 70 on April 20 with 53 sold on the former date and 57 sold on the latter. Last year the middle two weeks in April brought forth a demand which held prices firm at \$6.50 to \$6.75 while the same two weeks this year developed only a moderate demand, although the prices held steady at \$7 to \$7.25, and the month will close weak at the top figure.

Construction work is showing signs of a little more activity just now, although the brick distributors here have passed through three months of discouragement. Building was slow, in projections, because money was tight, and in consumption of brick in building already underway because the floods in the middle west delayed steel deliveries and when the flood passed, the mills were compelled to throw much of their structural capacity into railroad bridge fabrication. The tariff also unsettled the steel market so that producers were reluctant to blow in more furnaces to facilitate building erection in big markets like New York. Inasmuch as practically the entire building material market in New York depends upon the volume of steel business taken, not only at the present time, but as much as three to five months ahead, the real cause of the weakness of the brick market as far as demand is concerned is not hard to find.

In the Raritan market there is a marked firmness. These interests will close one of the most successful years in its history. Its normal capacity of 145,000,000 brick has practically been contracted for and the pallet yards of the Sayre & Fisher Company at Sayreville have been operated at about capacity during the winter to take care of the broadening market here in New York. Prices for

this brick are running at about \$6.87½ to \$7.12½, wholesale.

In the Hackensack district most of the plants have resumed operations, and just in time, because the local demand for common brick there during the winter has been very heavy and the shed stocks were getting dangerously low. Prices have not changed. Connecticut plants will be under way in about two weeks. No Connecticut brick to speak of is coming into this market now.

Newark reports a scarcity of common brick at \$8.25 yard, with demand good, and lists stiff. Hudson river selects are bringing slightly higher prices there. In all parts of East Jersey there is a splendid demand for common brick, first because of the revival of skyscraper construction in Newark and apartment house erection in Jersey City and industrial expansion in Communipaw, Essex county, and Elizabeth, which city, by the way is among the twenty-two banner cities of the country reporting gains in volume of building construction during the first quarter of the year. Manufacturers in the Hudson river district report a fair supply of brick on hand so that New York prices probably will hold their present level until the 1913 product begins to arrive here. There were thirty barge loads of brick in the market at dealers' docks this week ready to unload so that the dealers themselves are well supplied.

INDIANA.

Indianapolis, Ind., March 24.—Prospects are exceedingly bright for a big business in brick and sewer tile lines during the coming season. While few big contracts have been placed as yet, brick and tile manufacturers and their representatives are doing more figuring than usual. There has never been a better winter's business in Indiana than during the winter just passed. Most of this has been for small jobs, however. Brick prices are stiff, and it is said it is unlikely there will be any break in prices during the coming season. The general situation is much better than it was one year ago at this time.

A. E. Davis, local representative of the Western Brick Company, reports that the outlook for the coming season is unusually good. He says the business during the winter has been satisfactory. He reports that he has recently received orders for 200,000 face brick for the Y. M. C. A. building to be built at Muncie and for 65,000 face brick for the city hall to be built at Auburn.

With an authorized capitalization of \$75,000, the Granite Brick Company has been organized at Michigan City and will manufacture brick and sell sand. Those interested in the company are: Frank J. Hinkamp, Ernest Boettcher, Louis Holletz and Anton J. Schmidt, all of Chicago, Ill., and August C. Heitschmidt, of Michigan City.

A line of common and face brick and tile will be manufactured by the newly organized Long Vitrified Brick Company of North Judson. The directors and principal stockholders are: Glenn D. Peters, John W. Long, John Jacob Urschel, Orpheus C. Maurer and Bert H. Thompson. The company has been incorporated and has an authorized capitalization of \$65,000.

At the annual meeting of stockholders of the National Tile Company in Anderson recently, all of the directors were reelected. George Lilly, of Anderson, formerly of Indianapolis, was elected to succeed himself as president.

Brick and drain tile will be manufactured, and a general coal, grain, seed and brick business conducted, by the Hoosier Brick, Tile & Grain Company, which has received a charter from the secretary of state to do business at Moore. The company has an authorized capitalization of \$10,000, and those interested in it include Martin E. Klinger, Harry C. Bruce and George F. Whan.

Brick, tile and other business material will be handled by the Indiana Builders' Supply Company, organized and incorporated by Glen P. Beeler, Edward C. Kerth, Roy E. Sampson, Albert Schardt and Robert A. Schmalmack at Evansville, with an authorized capitalization of \$10,000.

"Pioneer Machinery is simply the best,
And used in clay Products, it stands Every test;
Durable, high-class, efficient and true,
It does for its users what others Can't Do.



REFERENCES:

Wm. E. Dee Clay Mfg. Co., Mecca, Ind.
National Drain Tile Co., Terre Haute, Ind.
Whitehall Sewer Pipe Co., White Hall, Ill.
Lehigh Clay Product Co., Lehigh, Iowa.
The Denny-Renton Co., Seattle, Wash.
The Gladding-McBean Co., San Francisco, Cal.
The Pacific Clay Products Co., Los Angeles, Cal.
W. S. Dickey Clay Mfg. Co., Kansas City, Mo.
Texarkana Pipe Co., Texarkana, Tex.
San Antonio S. P. Co., San Antonio, Tex.
Henry Stevens Sons & Co., Macon, Ga.
Pomona Terra Cotta Co., Pomona, N. C.
Shawmut Clay Co., Shawmut, Pa.
Robinson Graves S. P. Co., Uhrichsville, O.
Dominion Sewer Pipe Co., Swansea, Ont., Can.
The Hamilton & Toronto Sewer Pipe Co., Toronto, Can.
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Two Insertion Rate			Special Six Time Rate (NET)
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10 Lines Two Issues \$8.40			10 Lines Six Issues \$21.60

BRICK AND CLAY RECORD, Chicago, Ill. Gentlemen: Insert above advertisement for _____ issues in your Classified Ad Department, for _____

which I enclose check at price quoted on this card, allowing one word to each space.

191

Name _____ Street _____ Town _____ State _____

Sewer Pipe

Considerable interest is being taken abroad, in a German patent for making sewer pipes, with serrated edges, as shown in the accompanying illustration. These pipes differ from the ordinary type only in the serrated edges, whereby they can be



connected together at any angle, or made to form almost any curve. These edges are formed during the production of the pipe by an accessory machine, and the position of this determines whether the pipes will form a straight line or a curve.

The advantages claimed for the serrated edges are: greater resistance to earth movements, a better connection between the pipes, small liability to displacement, the entire absence of stoppages due to stones, etc., lodging in the angles of ordinary drains, and a greater drawing power, as the pipes are sufficiently tight to have a siphonic action. It is also claimed that smaller pipes than those ordinarily used can be employed, and that repairs and replacements of broken pipes can be made without difficulty.

Some idea of the strength of the connection may be gained from the statement of the patentees of the cutting machine used, that a pipe 9 in. in diameter and 3 yds. long, composed of twelve lengths of piping, will support a man's weight, when used as a bridge across a stream $2\frac{1}{2}$ yds. in width. The cost of manufacture is stated to be the same as ordinary wire-cut pipes.

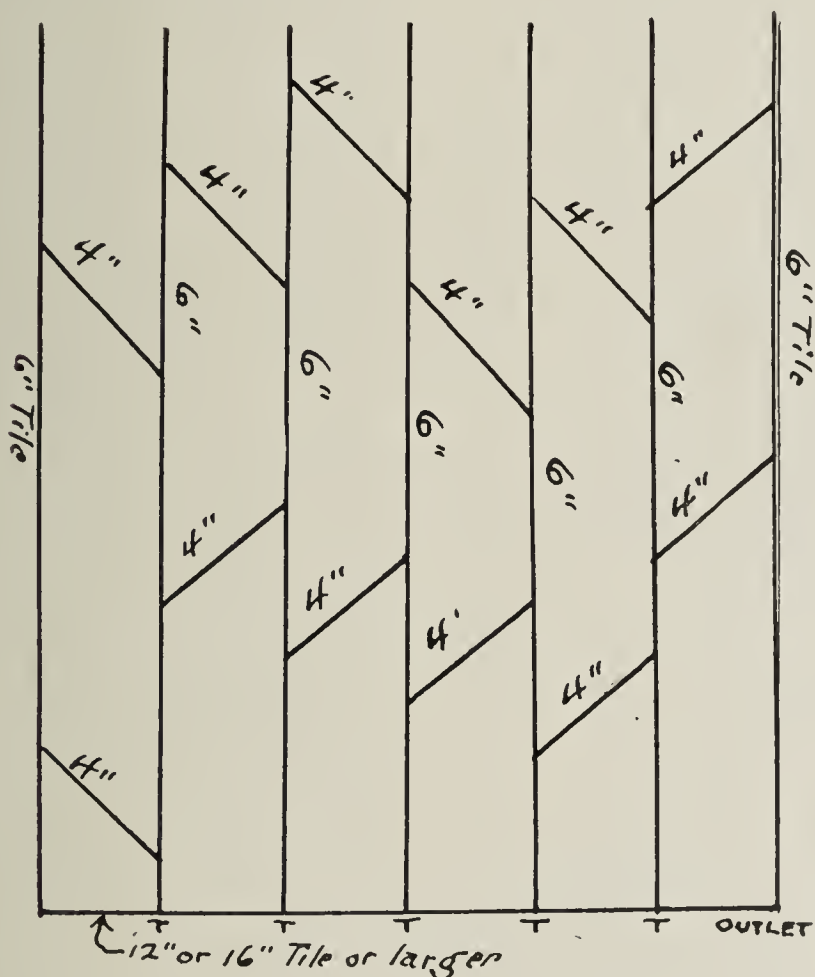
The outlook for pressed brick, terra cotta and sewer pipe is most encouraging, all manufacturers in these lines reporting a large volume of business now on hand, and much more in immediate prospect. Judging by the present volume of inquiry, the sewer pipe business will in all probability run far ahead of last year, as financial arrangements have been made for many municipal sewer projects, on which bids will be taken shortly. Fire brick, also, is in strong demand, with indications of steadily increasing requirements. The many oil refineries now in successful operation furnish an important outlet, and for the last six or eight months a number of steel plants in this vicinity have had an unusual rush. At least one of these plants is adding new furnaces, and an eastern steel company has just leased a site for a plant in this city. This industry has in the past shown a preference for foreign fire brick, but with the increasing requirements it is doubtful if importations will be sufficient to fill the demand.

Some manufacturers are looking for a shortage of No. 2 sewer pipe, which has found an unusual demand of late. One large lot has been ordered for use in this city, and orders for drainage and irrigation purposes have been coming fast, leaving comparatively little in the yards.

Drain Tile

C. E. Bandisch, of the Gulf Coast Brick & Tile Co., of Brownsville, Texas, has had considerable experience with alkali land and submits his method of treating this sort of soil, it having proved very successful. He says:

"I enclose you herewith a sketch showing how the tile should be laid. As to depth, it depends upon the outlet. The deeper the tile lays the better the ground will be after it is washed out. If the land is rough and has never been plowed, tile should be laid not less than 36 feet apart. If plowed before for crop, tile should be not more than 50 feet apart. The four-inch tile or cross arms should be laid at even distances apart, that is, one always ahead of the other as shown in the sketch, and all six-inch tile where the four-inch tile connects should have the four-inch in six-inch burned in. To avoid making the holes in the six-inch tile to admit the four-inch tile they should have at least one-quarter to one-half inch fall to every rod if possible.



"This method I can recommend to any one who wishes to get rid of alkali on his land. It has been successful here in the valley where the soil is different than anywhere else. It will improve the land and make it valuable."

The Dautremont tile works, Monticello, Ia., has started up with a full force of men. The company reports that the demand for tile has been good all winter and the last year product will be disposed of before the new is ready for market.

About 350 car loads of tile will be used in the new Lamm drainage district near Eldorado, Iowa. For the first 6,000 feet the tile used will be forty-two inches in diameter, the tile alone costing \$21,000; for the next 5,500 feet thirty-nine-inch tile will be used, costing \$13,750. Various other sizes will be used in smaller quantities.



Gears

For

Brick and Clay Working Machinery

The severe conditions imposed upon machinery in the Brick and Clay Working Industry demand that gears be specially designed and cut from material that will give

Long Life

and

Reliable Operation

A thorough study has been made of the operating conditions to be met in the Brick and Clay Working Industry—and a correct gear to meet your most severe requirements can be supplied.

Let us know your requirements

Nuttall : Pittsburgh

The largest gear works in the world



5 inch 4-Ply Leviathan Off-Bearing Touch-up Belt.

We Sell "Service"— Not Simply Belting

For more than 30 years we have been selling Leviathan Belting on a make-good basis. We never cut prices or talk prices. Our guarantee is as fair and square as you can ask for. It protects the buyer.

After all, what does a buyer care whether a belt is made of thirty-two-ounce or sixteen-ounce material (ours runs 34 ounces or better), or anything else about it, provided he gets the longest and best service at the least expense in the long run?



Isn't that the whole thing after all?

We have ready to send you enough definite information concerning Leviathan Belting in your line of business, to convince you thoroughly that Leviathan Service gives you what you should get for your investment.

Address our nearest house.

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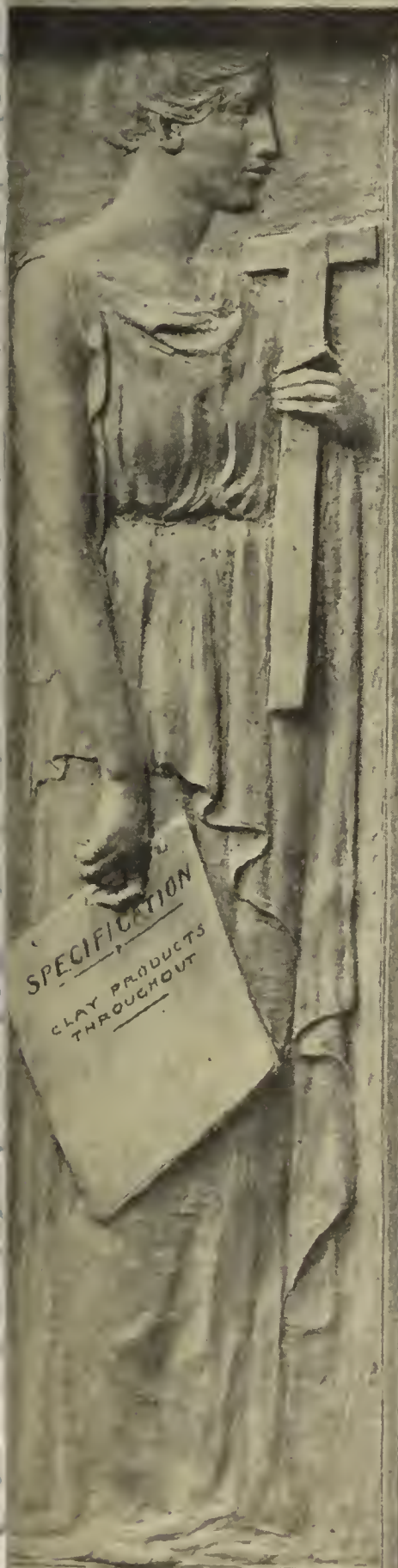
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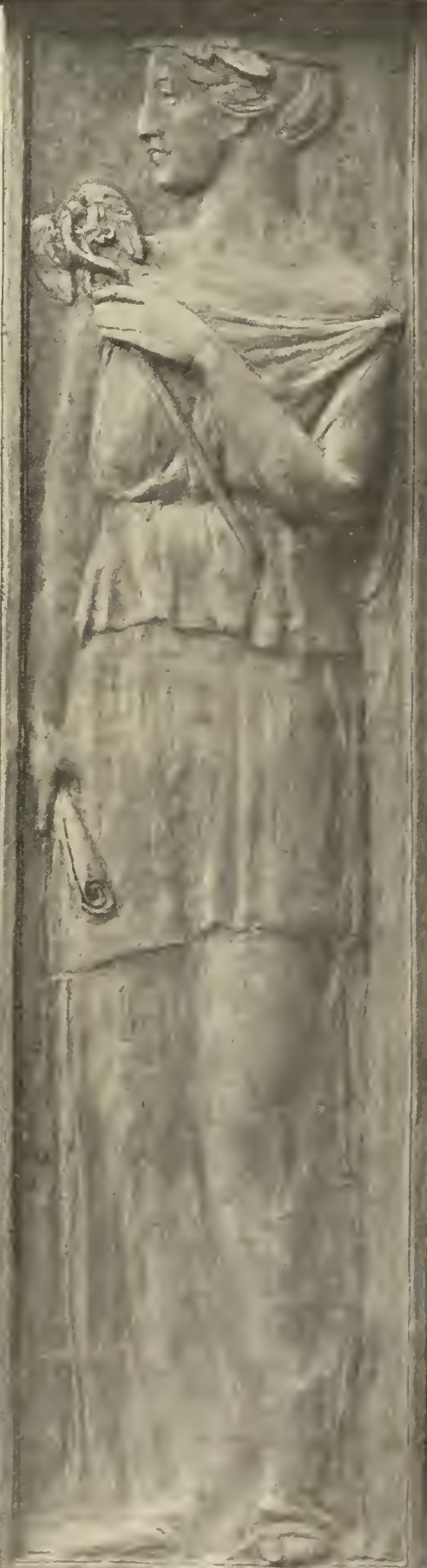
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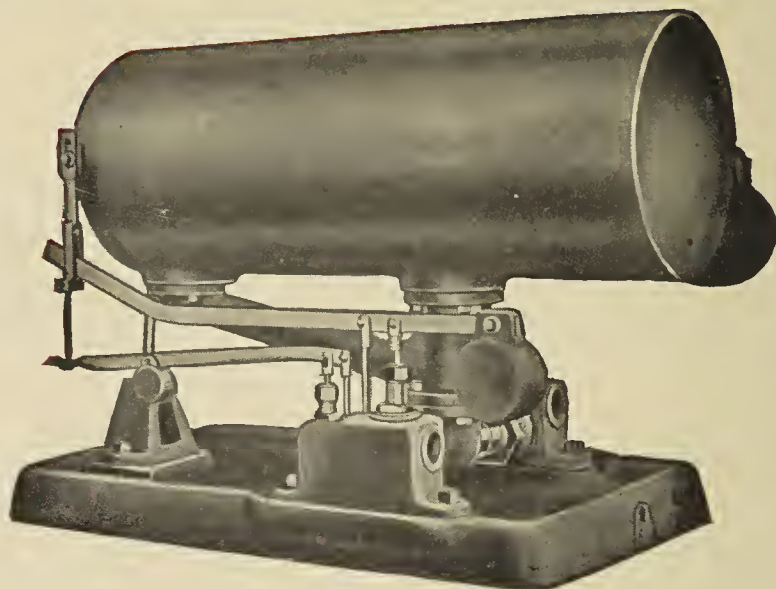
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BRICK

and CLAY RECORD

Volume XLII

CHICAGO, MAY 15, 1913

Number 10

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Guides the Destinies of the A. F. B. A.

L. G. Kilbourne

President Columbus (Ohio) Brick & Terra Cotta Co.



WHEN the American Face Brick Association met in Chicago, in March, 1913, one of the hardest tasks that it confronted was the election of a successor to J. M. Adams. The choice fell, naturally, upon L. G. Kilbourne, as representing the highest ideals of the brickmaking fraternity.

Conservatively progressive, Mr. Kilbourne has looked into the future many times in a long and active past, and as a result has helped the brick world in its progress by sensible departures from conventional lines—departures that hosts of brickmakers have followed with profit.

He was the first to ship face brick to far distant points. His "Columbus buffs and grays" were among the first light colored brick to come into the Middle West and West. In New York they were the forerunners of the present "spotless town" of towering apartments faced with light brick. He put the Roman and Norman sizes on the market and gave the trade the first three-inch Normans. Today he ships more face brick into Canada than any other American manufacturer.

Since ordinary men are judged by the company they keep, brickmakers may well be gauged by the quality of the brick they make. Taken by this standard of measure, Mr. Kilbourne stands rightfully at the head of an association made up of face brick manufacturers. The rigid inspection, close sorting and prompt shipment of his product, and the careful fulfillment of every promise of delivery, have made the name of Kilbourne a synonym for excellence in brickmaking and in brickyard management.

A resident of Columbus, that Medina of face brick men, Mr. Kilbourne has a summer home at Union Furnace, Ohio, where his plant is located. Here he entertains large parties of guests throughout the heated term and, at the same time, is close to the plant, ever watchful that the high standards of manufacture, selection and delivery he has maintained for years may not be lost to sight in a moment of forgetfulness.

His is a familiar figure at all brick conventions. A member of the National Brick Manufacturers' Association from its birth, a director in the Building Brick Association and treasurer of the Ohio Face Brick Manufacturers' Association, Mr. Kilbourne has given a liberal proportion of his time and energy to the upbuilding of the fraternal movement now sweeping the clayworking field. The difficulties and troubles he overcame in the past, alone and unassisted, he now sees conquered by bodies of men working together for the general good. Indeed it was "not like that in the olden days".

To the American Face Brick Association he brings a wide knowledge of men and affairs, a ripe judgment in all matters that pertain to the craft and a sterling honesty that will give his every decision weight—weight far above the slightest suspicion of bias. Fitting, indeed, is the choice of this, the Dean of Brick Makers, as the leader of the baby of the family—the youngest, but, if signs read true, the most potent of associations for the betterment of brick, of brick men and of brick men's fortunes.



VOL. XLII.

CHICAGO, MAY 15, 1913

Number 10

Iowa's Cry for Help

Drain Tile Maker Urges Manufacturers of Big Tile to Help Oust Cement Foe

There is a tile job in Iowa that will require three miles of 39-inch and 42-inch drain tile which is going begging for bids from the burned clay manufacturers and which, unquestionably, will be awarded to the concrete men unless the clay fellows get busy.

Iowa has been the battle ground for the cement people for some time, but the clayworkers of that state have combated them successfully and today reign supreme in the drain tile business. Victory, however, in getting this three-mile drainage contract will give the cement people an opening which they will not be likely to overlook.

The following letter, written under date of May 13, was received by "Brick and Clay Record" from B. C. Keeler, secretary of the Mason City Brick & Tile Co., of Mason City, Ia., just as this issue of the magazine was going to press:

"Will you kindly advise us if there are any firms in the Middle West territory that manufacture 39-inch and 42-inch drain tile?

"There is a district in Hardin County, Iowa, that will require about three miles of these sizes. The county invariably has used clay tile in all its drainage work, but unless these sizes can be obtained it probably will open the situation up to competition with cement tile.

"Evans & Howard Fire Brick Co., of St. Louis, had represented to the engineer that they would furnish the tile, but on the day the contract was to be let, their representative, Mr. Johnson, did not make a bid and stated that his firm would not be able to furnish tile for a year and a half on account of the heavy orders they now have.

"We are very anxious to get away from cement tile competition and we will appreciate any information you can give us."

Immediately upon receipt of this letter "Brick and Clay Record" telegraphed George Tefft, secretary of the In-

ternational Clay Products Bureau, Kansas City, Mo., and acquainted him with the facts and urged him to get busy on the situation.

Mr. Keeler also was informed that the records of this office showed that W. S. Dickey Co., of Kansas City, Mo., and the National Sewer Pipe Co., of Webster City, Ia., made tile of the desired size.

It is urged that every manufacturer of this size drain tile get in touch with Mr. Keeler at once by telegraph and offer whatever aid possible under the conditions existing.

It is by this sort of concerted action that something can be accomplished.

The clayworkers may rest assured that the cement people will work in harmony with each other on the matter and that they will leave no stone unturned in their effort

to get their material in Hardin county, knowing that it will give them a leverage they never had before.

The stake at issue is more to the clayworkers than the dollars and cents' end of the deal. It means that the courageous clayworkers in Iowa, who have been putting up such a manly fight against the cement interests, will be given the support of the industry as a whole and that when the cry for help comes it is not passed unheeded by those who have every reason to be vitally interested.

It is to be regretted that the organization referred to in an editorial in this issue and also which was referred to in the last two previous issues, is not in existence. This situation in Iowa is only one of many that could be handled most profitably by some association of that nature.

Drain Tile Makers Heed.

Big Contract Goes Begging.

There is a district in Hardin County Ia., that will require three miles of 39-in. and 42-in. drain tile.

All manufacturers of burned clay tile of these sizes, who are in the Middle West or who can compete with cement, are urged to telegraph "Brick and Clay Record" at once.

The cement interests are doing all they can to get a hold in Iowa. This big contract will go to them only because there are no clay tile bidders.

CHALDEANS, NOTICE!

The monthly tablet will be printed hereafter only on the First of each month

Urge Bars Down for Brick

Hudson River Manufacturers Want Product to Get Even Break With Concrete

A plan is on foot in New York to let down the bars to common brick of various grades instead of insisting upon one specification covering common brick for all types of buildings. If it goes through and becomes part of the revised building code, manufacturers supplying the New York market will not have to charge so much off on the profit and loss account for "soft" brick, and will make a market for a larger output per plant. Furthermore, it is intended as a movement to check the substitution of concrete for brick.

Congressman William N. Calder, a big Brooklyn, N. Y., builder, and Audley Clarke, one of the leading building material dealers of New York, with others, constitute a committee of experts who are now at work preparing a new table of brick standards which they hope to have incorporated into the new code, which will determine the strength of common brick to be used in different forms and kinds of construction, and the amount of absorption permitted in common brick for various uses. This will materially affect the cost of brick in New York city, as the need of a more comprehensive basis for admitting brick into general building construction has long been felt. The old code apparently goes on the presumption that a brick is a brick regardless of the uses to which it is to be put. At present, "a well burned, hard North river brick with a metallic sound when slapped together, or equal" to quote the code, is required alike for a great towering structure as for a suburban residence. The inconsistency of this has been apparent to builders for years and instead of the code exacting the use of one standard of brick for all types of construction some provision should be made to regulate the use according to loads carried and the exposure of the walls.

Works Hardship on Manufacturers.

Heretofore this code has worked a hardship upon manufacturers as well as owners who, while they may have believed in the permanency of brick as a building material, have been compelled, by reason of lower first cost, to use concrete instead. All other building material has to comply with certain tests that experience has shown necessary and brick, if tested for crushing strength, absorption, etc., and made to conform to various standards, based upon the use to which the material is to be put, would be better for the builder than the makeshift he is now compelled to use, while brick that are eminently fitted for certain uses are discarded, so far as the New York market is concerned. Brick have been known to run as high as 100 times the factor of safety. Fifty times is very common, while ten times is sufficient in all cases, except when special exposures necessitate a low per cent of absorption.

Brick manufacturers supplying the New York market are urged to communicate with Congressman Calder and Mr. Clarke, giving them all the data possible to support the contention that a "brick is a brick" even though it does not conform to a moth-eaten test and that it can be safely and economically used in certain work, even though unfit for use in other kinds of construction.

The question of heights, backing up of cornices, extension of fire limits, reduction of thickness of walls required for smaller dwelling houses and various other points that will reduce the cost of dwellings, especially

those designed to accommodate the laboring classes, for whom no buildings have been put up since the introduction of the Tenement House Code now in force, are all matters of great importance to the city of New York. A practical building code that will provide for the erection of buildings that are substantially built and have proper sanitary arrangements, sufficient light and air, but that are not hampered by unnecessary requirements, will be urged as the prominent changes that should be written into the new code. It is proposed to draught a brick section that will encourage builders to erect moderate priced brick buildings to rent from \$16 to \$18 a month. Under the existing building laws this seems to be impossible.

The significance of this movement to brick manufacturers lies in the fact that great tracts of land now destined to lie idle for years in the suburban districts, will be opened up to the erection of moderate priced habitations for the laboring classes as soon as the new subway systems are opened. It may be before that, because speculation is gaining headway in these districts, but under the present code brick buildings are giving way to concrete structures because of the onerous limitations now placed upon the use of brick in all construction work whether it be a skyscraper or a one story dwelling in the outskirts of New York.

Gives \$3,000,000,000 for Good Roads

If the bill recently submitted to the joint congressional committee on federal aid in the construction of post-roads evades the many pitfalls that lie in wait for measures of real public utility, a tremendous impetus will be given road building all over the country. The plan contemplates the expenditure of \$1,000,000 for construction purposes, this money being apportioned among the states on the basis of area population, assessed valuation and road mileage and that the several states shall deposit in the United States treasury their fifty year 4 per cent bonds for the amount due them and the government loan the states the par value thereof for road construction, the government raising its fund by the sale of its fifty year nontaxable 3 per cent bonds.

By crediting each state every year with the excess 1 per cent interest paid by the state to the government over what the government pays on its bonds and allowing 3 per cent interest compounded annually on said excess 1 per cent, a sinking fund is established.

A further sum of \$2,000,000,000 is provided for, to cover repairs and maintenance for a period of fifty years. State aided roads and other state highway work will be reported to and considered by the government, so that road improvement will be logical and economical. The plan is fathered by former Senator Bourne of Oregon.

ASK A QUESTION.

Are you taking advantage of our "Question and Answer" Department? See page 866.



At the Left Are Shown Longitudinal Cracks Between Rails and Trolley Tracks Attributed to Transverse Building of these Paving Strips. At the Right Is Shown an Upheaval at the Sidewalk Crossing.

The Ideal Pavement

SOLVE PROBLEMS OF THERMAL EFFECTS ON VITRIFIED BLOCK AND YOU HAVE IT

By James E. Howard

Engineer-Physicist of the U. S. Bureau of Standards

Illustrated from Photographs

Mr. Howard believes a brick-paved street with cement-fitted joints, is the best, and says so in a recent address before the American Society of Municipal Improvements, at Dallas, Texas.



AN ideal street pavement is one which presents a smooth surface of such hardness and rigidity that the tractive effort of moving vehicles is reduced to a minimum; having a surface smooth, without slipperiness; of adequate frictional properties for the safe footing of men and animals and against the skidding of motor-driven vehicles; durable against abrasive wear, and of sufficient compressive strength or sustaining power against concentrated wheel and toe calk loads; one in which the physical properties are not materially modified by the usual range of atmospheric temperatures and which is practically non-absorbent and impervious to moisture. These conditions are generally met in a pavement of vitrified brick of monolithic construction, the continuity of which is attained by means of cement-filled joints.

If not confronted with destructive tendencies, incident to changes in dimensions caused by changes in temperature, there is apparently no reason why a well constructed brick pavement should not maintain a state of integrity and successfully endure traffic conditions for many decades of years. The principles of road construction are generally understood and practised and at times there is close approach to attaining results which are not expected to be surpassed.

An inquiry into the effects of changes in temperature on cement-filled brick pavements is an inquiry of a refined order, taking up the subject at an advanced stage, from a constructional point of view, but nevertheless involving questions of vital importance, the solution or adjustment of which will promote the success of this

type of pavement and contribute toward securing that permanency which is desired.

Referring to the physical properties of vitrified paving brick, the crushing strength commonly ranges from 10,000 to 15,000 lbs. per square inch, not infrequently reaching and exceeding 20,000 lbs. per square inch. The compressive modulus of elasticity is found to range ordinarily from 2,500,000 to 8,000,000 lbs. per square inch, with a value as high as 10,000,000 lbs. per square inch occasionally observed. In building brick, values below the above mentioned minimum are often displayed. The compressive strength and modulus of elasticity increase as the weight per cubic foot of the bricks increase, while the porosity or rate of absorption of moisture decreases. That is, the more material there is in a given space the stronger and more rigid it is and necessarily less porous. These are features which should be considered in a paving brick and they are features which are controllable in the process of manufacture, at least the apparent modulus of elasticity is modified by the conditions of burning the brick, while the crushing strength and density certainly can be controlled within limits.

As regards the value of the coefficient of expansion of brick, data are not as complete as desired. The values frequently seem to be in the vicinity of .0000040 per degree F., with some examples however approaching the values for steels, or above .0000060.

A value of .0000040 has been accepted for the time being in considering some of the phenomena attached to the expansion of pavements since this corresponds well with the observations which have been made.

In regard to the significance of the relation between the modulus of elasticity and the coefficient of expansion in respect to the force which the confined material would develop when raised through a range of temperature of 100 degrees F., taking for examples four mud brick

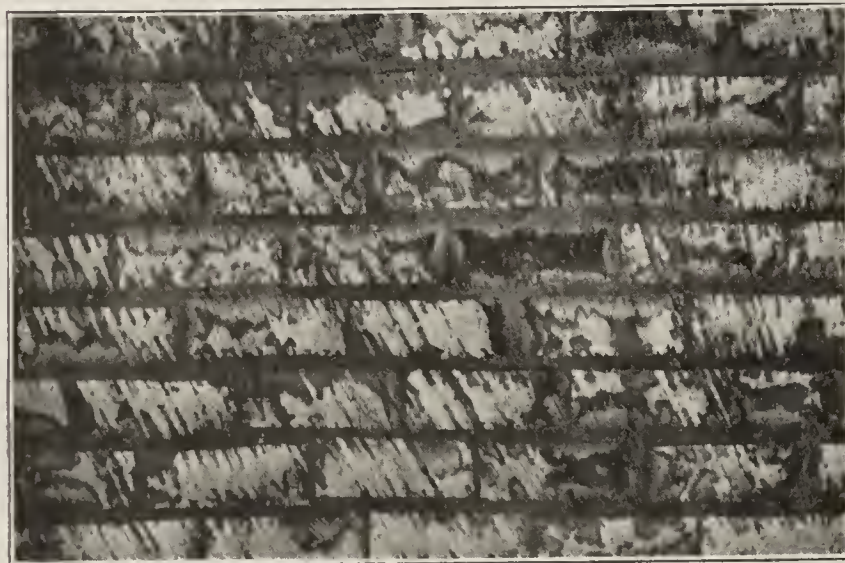


Transverse Crack in Pavement, Opposite End Joint of Curb Stone, Attributed to Contact with Edged Stones.

selected from different parts of a down draft kiln, the following table is presented.

Lbs. per sq. in.				
Location in kiln	Modulus of Elasticity	Crushing Strength	Weight per cu. ft. Lbs.	Confined Stress Lbs. per sq. in.
Top	10,000,000	19,170	144.3	4,000
1/4 down	7,692,000	15,670	136.4	3,076
2/3 down	5,263,000	10,420	130.6	2,105
Bottom	4,545,000	10,870	125.4	1,818

That is, brick of these moduli of elasticity would be expected to develop, when confined and strictly prevented



Dark Lines in Grouted Joints Representing Cracks in Early Stages of Development.

from expanding, compressive stresses ranging from 1,818 to 4,000 lbs. per square inch.

The bearing which these figures have upon the behavior of cement-filled brick pavements is this: The pavements will develop certain compression stresses when the temperature is raised, which stresses will be greater with brick of high crushing strength with high modulus of elasticity in comparison with those of a lower modulus of elasticity. Only a portion of the possible maximum confined stress will, however, be realized but the relative expansive force exerted should be proportional to the moduli of elasticity and since the highest values pertain to the strongest brick, those pavements constructed of the strongest material will be capable of exerting the highest stresses which are incident to rise of temperature.

It would in some cases relieve the magnitude and

severity of thermal effects to restrict the brick to a grade sufficient to provide adequate abrasive resistance for traffic conditions of a particular street. The endurance of brick pavements against abrasive wear has been found from experience to be so great that no trouble is ordinarily apprehended in that direction. It is believed, therefore, that the selection of the bricks and modifications in the manner of laying the pavement, tending to ameliorate thermal effects, are matters deserving consideration.

Observed Expansion of Cement-Filled Pavements.

The observed expansion of cement-filled pavements, in a direction crosswise the roadway, has corresponded closely to the coefficient of expansion of .0000040 per degree F. In the following table, however, the computed expansion of roadways of different widths is given for a range of temperature of 100 degrees F. for assumed coefficients both of .0000040 and .0000060.

Computed Expansion of Cement-Filled Brick Pavements for a Range of Temperatures of 100 Degrees F.

Width of roadway.	Assumed coefficient of expansion.	
	.0000040	.0000060
4 feet 8 inches.....	.0224	.0336
14 feet.....	.0672	.1008
25 feet.....	.1200	.1800
30 feet.....	.1440	.2160
40 feet.....	.1920	.2880
50 feet.....	.2400	.3600

The table gives the total computed expansion, one-half of which might be taken as occurring at each side of the street.

Although the maximum stresses which the confined material could display would range in round numbers from 25,000 to 50,000 pounds per individual brick, yet the street curbing could not ordinarily afford any such reaction. Curbing which is backed up by earth filling yields to moderate pressures when they are long sustained, and in a crosswise direction pavements would not be expected to develop forces of very great magnitude in the absence of substantial buttresses. The fact that the middle of roadways rises during the period when the bricks reach a high summer temperature is occasioned and facilitated by the crowning of the roadway. The usual pavement is, in transverse section, a bent column, of very slender proportions which easily rises, increasing the crowning of the arch and may result in the formation of longitudinal cracks.

Referring to observations which have been made on pavements in Cleveland, O., and vicinity, covering a period of a few months over a year, they have embraced measurements on thermal effects, in which attention has been directed to changes in length taken both lengthwise and crosswise the roadways. Reference lengths of 20 inches each were established and defined by means of small bronze plugs inserted in the pavement. The tops of the plugs were about $\frac{3}{8}$ " below the surface of the pavement and protected against traffic by paper washers and putty. These plugs had in their upper ends small drilled and conically reamed holes, from centre to centre of which measurements were made.

A strain gauge of the style shown by Fig. 1 was used for measuring purposes. Generally the readings of the gauges checked to a ten thousandth of an inch, although that degree of accuracy will not be claimed for the work. It is believed, however, that changes in the reference lengths were measured reliably within two ten thousandths of an inch. A steel reference bar is used in connection with the strain gauge. The comparatively short gauged lengths of 20" each are preferred instead of longer ones for inquiries of this kind where specific and detailed information is sought on the behavior of the pavements.

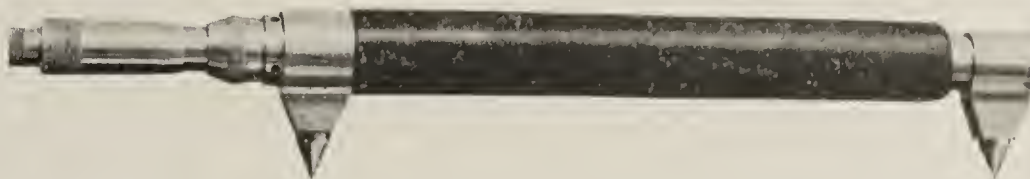
In addition to the measurements with the strain gauge on changes in dimensions due to changes in temperatures, the work at Cleveland included a number of observations on the elastic depression of loaded pavements and the depression of trolley tracks under the weight of cars.

A drop in temperature of the brick work of 30 degrees from day to night is not uncommon. An uncovered pavement can hardly endure this drop in temperature without starting incipient cracks. A thin layer of sand on the pavement aids somewhat against the joints being put into a state of tension by the lower temperature of the night. It is probably quite impracticable to use a sufficiently deep layer of sand to entirely protect the pavement against this drop in temperature, while the grout is acquiring strength. Incipient cracks appear at first as fine dark lines, darkened apparently by the presence of moisture. Later the lines are white, caused probably by the lime in the cement of the grout going into solution and then being converted into the carbonate. These phases have been observed, although they may not be conspicuous in all cases.

It would seem that a period of favorable weather conditions would be met, for monolithic pavement construction, when minimum diurnal changes in temperature prevail, immediately following the time of grouting. Cement users are well aware of the necessity of keeping the cement quiescent during the period of setting, and the same necessity exists in the case of grouted pavements as in other kinds of cement work. The extent of the surface exposed in a pavement precludes the adoption of means which would be practicable and adequate to avoid

exempt from transverse cracks due to early changes in temperature. Observations tend to prove that such cracks are of common occurrence.

There seems a progressive development in these early transverse cracks, which first appear as fine hair lines and eventually have a measurable width. The presence of a number of such transverse cracks, and commonly quite a number are formed, leads to a lengthening of the pavement as a whole. The pavement noted in ten months' time had extended in one direction and crowded over the marginal curb at the crossing of the tracks of the N. Y. C. and St. L. R. R. about $\frac{5}{8}$ " and in the other



Strain Gauge Used in Measuring Thermal Effects on Pavements.

direction had crowded the asphalt pavement, carrying with it and deflecting the trolley tracks.

Some of the transverse thermal cracks which were developed in the pavement of Farmington Road, East Cleveland, were spanned by reference lengths of 20" each and the progress of development observed. This street was paved about the 1st of August, 1911. Measurements of reference lengths established on the pavement were taken at intervals during the following months of September, October and November. The measurements of one reference length spanning a transverse crack showed that its development took place as follows: Sept. 22, 0", Sept. 30, .0080", Oct. 23, .0170", Nov. 9, .0250", Nov. 13, .0377".

The temperature of the brick on Sept. 22nd was about 90° F., while on Nov. 13th it was 32° F. This is an example of a wide crack. A remeasurement on the following August showed the crack very much reduced in width, the temperature then being 82° F.

In the progressive development of a transverse crack there is a probability of its not closing entirely when the pavement subsequently reaches a maximum temperature. Fine particles of sand or abraded material from the surface of the pavement are likely to be swept into the crack during the daily drop in temperature and prevent the closing of the crack when the pavement again reaches a higher temperature. This process will be repeated until the pavement reaches a state of considerable longitudinal compression. The middle part of the length of the street would then remain in a state of more or less initial compression over certain ranges in temperature while the ends, if unresisted, would extend measurably in each direction longitudinally.

That part of the street which is under initial compression longitudinally is for the time being in a firm condition and capable of sustaining traffic satisfactorily. If the cracks are numerous and near together, and not under sufficient longitudinal compression, the sections then act independently. When depressed by the load of a vehicle an abrasive action will take place between the cracks and tend to enlarge them.

The pavement is believed to be in a favorable condition when under initial longitudinal compression, and the same would be true of lateral compression if the pavement was flat or had very little crowning. Initial compression as such seems advantageous or a certain amount is advantageous. This state of compression may be reached and maintained along the middle part of a straight roadway but difficulties are encountered at open



Six-Inch Channel Between Pavement and Cement Gutter, Due to Crack of Pavement and Abrasive Wear of Wheels.

excessive thermal strains in certain other engineering examples. It is safe to say that thermal cracks must be recognized as a probability and their presence expected, and that they may have their origin in point of time prior to the opening of the street to traffic.

One pavement observed was shown to have a transverse crack, opposite the end joint of the curbstones. This street did not have an expansion joint, hence there was at least considerable frictional resistance between the pavement and the curbstones. The diurnal expansion and contraction of the curbstones would affect the width of the joint between them. In this case, the brick followed the movements of the curbstones and a transverse joint in the pavement was developed. While this street did not have expansion joints at the curb it will not be understood that streets with expansion joints are

ends in providing an adequate marginal curb to resist the thrust.

Curves Need Special Treatment.

Curves in the streets present places where the continuity of the pavements is necessarily interrupted and call for special treatment. Intersections do not appear to offer particular difficulties. The forces are balanced at such places, and if the pavement is flat or nearly so the compressive stresses will be easily resisted by the brick. At curves and bends in the street unfavorable conditions are present. The pavements move from the inner curb and are forced against the outer one. Commonly the outer curbstone is displaced by the pressure against it. In a short reversed curve perhaps the most unfavorable conditions prevail and shearing stresses break up the pavement at such places.

A noticeable feature in the cement-filled parts of the pavement of Kennedy Ave., Cleveland, is its creeping toward the low resisting tar-filled section. The lower, cement-filled section is traveling up grade toward the tar-filled section and carrying with it a part of the pavement of the driveway entrance, while the upper, cement-filled section is compressing the intermediate section in a down-grade direction. This compressive force is felt at the ends of the tar-filled section but not at the middle of its length. Along the center line of the roadway the 20-inch reference lengths in the tar-filled section were shortened .1155" and .1968" respectively, for the upper and lower ends of the section, between the dates of Sept. 29, 1911, and Aug. 25, 1912.

The travel of the lower cement-filled section, in an up-grade direction as it chanced to be, carried with it a portion of the pavement of the driveway entrance. The portion of the driveway pavement above the zigzag crack was carried along by the general movement of the surface of the roadway.

Another illustration shows a longitudinal crack along the crown of the roadway, the formation of which is attributed to lateral compression raising the crown and causing a fracture by the crosswise bending of the pavement. While the brick would be unaffected either by such longitudinal or lateral compression as would result from increase of temperature over atmospheric ranges, still it would require comparatively little force to raise the pavement against its own weight only, starting in a bent condition by reason of the usual crowning given the pavement in its construction.

In the tar-filled section of Kennedy avenue pavement, the joints were partially depleted of the filler through flow of the material. This affected the pavement along the center line of the street, the tar flowing down grade and toward the gutters where it accumulated. A cement filler, would, of course, afford the necessary support to the edges of the brick and tend to prevent so early destruction of the individual brick. The traffic on Kennedy avenue is not very great for a city street.

On another street we noted the creeping of a brick pavement and its effect upon an abutting asphalt pavement. A ridge in the asphalt was raised and a gas main cover tipped by the movement of the cement-filled brick pavement. The weaker asphalt pavement readily yields to the pressure exerted by the brick pavement, while the latter itself is more or less cracked in that vicinity as it would be at an open end. The creeping of a strong brick pavement disturbs manhole frames and carries along with it catch basin gratings as shown by Fig. 11. The pavement of Belmore Road, East Cleveland, showed a movement about equal to the width of a brick.

One end of Belmore Road abuts against Euclid avenue

on which there is a double track trolley line. The pavement of Euclid avenue offered little resistance against the creeping of this side street and facilitated the shearing of the catch basin grating.

These illustrations are selected as typical examples and it will not be necessary to refer to other similar instances. Having in mind the forces generated and their manner of development, it is generally an easy matter to consistently account for the effects of thermal conditions witnessed in pavements, and where unbalanced forces exist to predict those movements in the pavement which are realized.

There are places in pavements where very little changes in dimensions have occurred for a range of 50 or more degrees temperature. There is a compensation in the relief of initial longitudinal compression which occurs during a drop in temperature and this has nearly or quite compensated for the contraction incident to the lowering of the temperature. The result, observed at a section of Euclid avenue, near University Circle, Cleveland, was the maintenance of substantially a constant or fixed gauged length. Obviously, a section where no movement of the pavement occurs marks a place of great durability. Without the disturbing factor of changes of temperature the construction and maintenance intact of a monolithic pavement would be much simplified.

Measurements of transverse reference lengths are in general more regular and follow changes in temperature more consistently than the changes in the longitudinal reference lengths. It may be remarked in passing that no substantial difference appeared between pavements with and those without expansion joints at the curb, in respect to the display of lateral expansion and contraction. In a longitudinal direction the presence of occasional cracks across the roadway cause some reference lengths, those spanning the cracks to be longer when the temperature is lowered by reason of the adjacent sections contracting and opening the joints. In few places is there strictly normal behavior witnessed in the longitudinal reference lengths.

Action at Inside of Curve.

At the inside of a curve on Carlyon Road, East Cleveland, Ohio, the pavement had left the cement gutter and was forced over against the opposite gutter. The open channel between the pavement and the cement gutter at the inside of the bend was 6 inches wide, as shown in the illustration. A considerable part of this opening, however, represented the result of abrasive wear of vehicles. It was not all due to the bodily movement of the pavement. From 2 to 2½ inches represents the maximum movement which has been observed in other streets taking place in a direction away from the inside curb.

The pavement of Carlyon Road was under initial strains when the repairs were made. A portion of the pavement was torn up whereupon part of it gradually moved outward radially, an additional distance of ¼ inch as first observed, which was subsequently found to have increase to about ½ inch. Sidewalk flagging afforded the necessary reaction to fracture the combined cement gutter and curbing.

In the case of Emily street, East Cleveland, which has a bend near one end of some 50 degrees more or less, the pavement has left the inside curbing for a distance of 160 feet, crowding over against the outer curb. Tension cracks are on the outside of the bent pavement and where the longer tangent of the street has acted upon the shorter one. At the inside curb the maximum opening between the pavement and the curb was found to be 2½ inches.

The conditions in streets with short reversed curves are rather more severe than in single bends. The long tangents set up shearing stresses which fracture the pavement at the reversed curve. The illustration shows such an example on Cummington Road, East Cleveland. The pavement was forced into close contact with the outside curbs of the bends, while at the inside curbs the openings were $1\frac{1}{2}$ inches and 2 inches respectively. At the junction of Abington Road, with Cummington Road, near the reversed curve of the photograph, there were two openings of $2\frac{1}{2}$ inches each between the pavement and the curbstone. These several openings are believed to have been the result of the gradual lengthening of the pavement by alternate expansion and contraction. When cold, gritty material would sift into open cracks and prevent them closing subsequently when the pavement was next heated, this process being repeated, gradually causing a pronounced lengthening of the entire surface.

Some of the foregoing examples were taken from streets which have been paved for a term of years. The effects of changes in temperature are cumulative in part and it would require several years to elapse before certain effects reach a maximum stage of development. Predictions based upon the relations existing between the coefficients of expansion, the moduli of elasticity, and the crushing strengths of the brick lead to the inference that when the thermal effects are considered the behavior of these earlier paved streets may be taken as examples of what should be found in current construction.

Greater strength may reside in recently constructed pavements by alternate expansion and contraction. When strains may be introduced by reason of the higher physical properties of the materials used. Internal generated forces depend for their magnitude upon the physical properties of the materials themselves. It is believed that thermal effects will be similarly displayed in pavements both of medium and of maximum strength, and either grade may be taken as indexical of the other.

Cracks parallel to the rails of a trolley track are caused by the depression of the trolley track carrying down the pavement which is bonded to or in contact with it. Only track of the highest degree of rigidity can safely be bonded to. It is injudicious to bring cement-filled brick pavements against the rails of trolley tracks generally speaking, and yet that may frequently be the most expedient course to adopt. It is not expected that all troubles will be eliminated even though the causes are well understood, and cracks must be looked for in certain places in monolithic pavements.

Result of Alternate Temperature Changes.

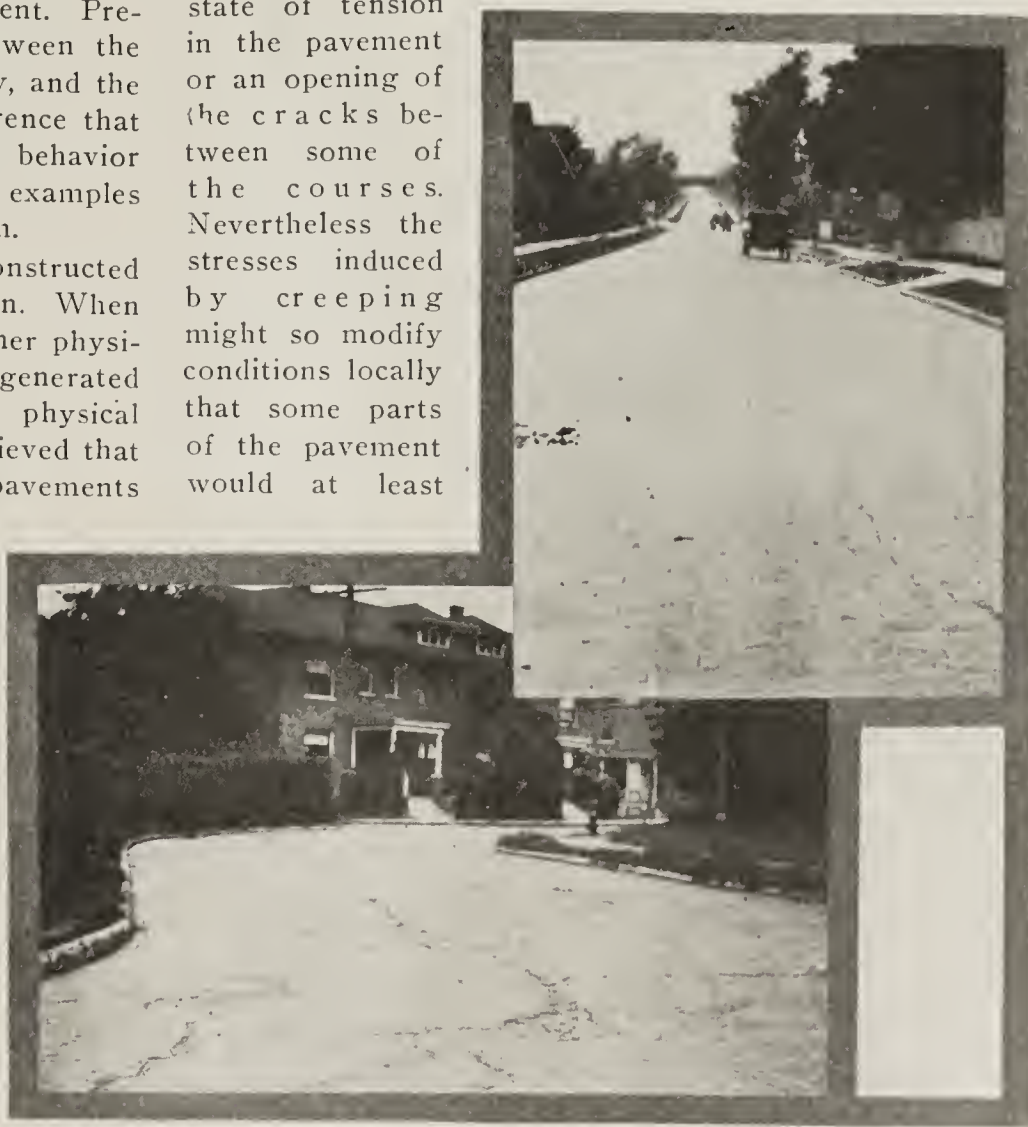
Transverse cracks in pavements are commonly the result of alternate changes in temperature, and some longitudinal cracks owe their origin to the same cause. Other longitudinal cracks are occasioned by the crosswise bending of the pavement. There are a number of causes which would occasion bending strains and which the rigid character of monolithic pavement would be unable to endure without fracture.

Longitudinal cracks between the rails and trolley tracks in West 14th street, Cleveland, Ohio, are attributed to the transverse or crosswise bending of these paved strips. The expansion of such narrow strips as these would be only a few hundredths of an inch for a range of 100° F. and compression forces due to changes in temperature would not account for the formation of these

cracks. These cracks appear to be due to crosswise bending of the pavement, in reaching which result the depression of the tracks and possibly the yielding of the ties on which the track rests are important factors.

In the pavement of E. 32nd street, Cleveland, O., courses of wood block were introduced at intervals of about 150 feet each, and were evidently intended for the purpose of performing the functions of a transverse expansion joint. The brick adjacent to the creosoted wood blocks were spalled in a number of places. The middle of the length of a straight street is believed to need no expansion joint, and as for the ends they would be benefited by being confined by rigid marginal curbs rather than by the use of joints of a yielding character.

This being true, it is a mistaken idea to introduce transverse expansion joints in any part of a street. A pavement will be in a state of initial compression of magnitude only a portion of the year in Northern climates. It has not yet been ascertained what state the pavements are in at winter temperatures. In general it would be expected that exposure to temperatures lower than that at which the cement-filler set would be attended by a state of tension in the pavement or an opening of the cracks between some of the courses. Nevertheless the stresses induced by creeping might so modify conditions locally that some parts of the pavement would at least



Upper picture shows Longitudinal Crack in Cement-filled pavement attributed to crown of pavement being raised by lateral compression. Below are shown Shearing Fractures of pavement at curve in roadway.

remain in a state of compression over a greater range of temperature than other parts.

The popular idea of the condition of a pavement is not infrequently based upon some feature entirely distinct from the pavement itself. An example of which is shown in the defective condition of the trolley track on Madison avenue, Cleveland, O. This street appears to have acquired an unenviable reputation for its pavement when in fact the pavement is very good, but owing to a particularly poor piece of trolley track the street can only be crossed with difficulty.

The accompanying illustration shows an upheaval of a

sidewalk crossing on Ravine avenue, Cleveland, O. It is quite unlikely that such a detail will again be used since the disrupting effect of exposure to high summer temperatures on such a feature is well known.

Longitudinal compressive forces are well resisted when the elements of the pavement parallel to its length are straight lines, but the introduction of sidewalk crossings, sharply crowned thus changing the elements to curved ones, make very weak places, easily upheaved by rise of temperature.

Straight members, not curved ones, are employed in other engineering structures to sustain loads of compression and a street pavement is an engineering structure which is governed by the same laws as other structures which are similarly loaded. If there is a divergence in



Above are shown Joints in Tar Filled Pavement partially depleted of Tar Filler. Below is shown a zig-zag crack in driveway, leading from cement filled section of pavement.

a pavement from the best form of compression member, that is a flat surface, for drainage, or other purposes, the departure should be a minimum.

Some Important Conclusions.

In conclusion; it is believed that the integrity of cement-filled brick pavements can best be maintained by adopting such details of design and construction as will enable the pavements to resist forces of compression which are incident to alternate changes of temperature.

That provision to resist such compressive forces should apply to the pavement in both longitudinal and cross-wise directions.

That initial compression, within limits, is a desirable feature to have in a pavement and that it seldom happens that the maximum compressive stresses occasioned by rise of temperature are sufficient to cause injury to the brick by approach to their crushing strength.

That the middle parts of the lengths of straight streets are from position best located to maintain the continuity of the pavements intact.

That open ends of paved streets may be expected to display creeping tendencies and that such creeping will occur.

That end creeping is a consequence of a permanent lengthening of the pavement and while individual brick of the pavement will successfully resist compression stresses incident to rise of temperature, still the total force thus generated is too great to admit of being entirely resisted by marginal curbs or other means, available.

That streets having others enter from one side only are unfavorably situated in respect to being exposed to overstraining forces.

That curved roadways have a tendency to leave the inside curbing and crowd against the outside.

That continuous pavements will not be expected to remain intact at short reversed curves in roadways, at least in the case of streets having long tangent ends.

That pavements to successfully resist the compressive stresses caused by variations in temperature, should be laid as nearly flat as feasible, that is with minimum permissible crowning.

That compression stresses in pavements in directions in which the elements are straight lines are advantageous rather than detrimental and assist in keeping the pavements intact. Conversely, that compression stresses acting in directions in which the elements are curved are menacing to the integrity of the pavements.

The compressive stresses referred to are those caused by thermal changes and which act in the plane of the pavement, and do not refer to loads or stresses normal to the surface of pavements, such as wheel pressures of loaded vehicles.

MISSOURI HAS VALUABLE DEPOSITS.

State Issues Pamphlet Showing Resources are Varied and of High Class.

Statistics show few states surpass Missouri in deposits of valuable clays. In a neatly illustrated, vest pocket pamphlet gotten up under the direction of H. A. Buehler, State Geologist of Missouri, the Missouri Geological Survey shows that few states surpass Missouri in the variety of valuable clays, and the output of the clay industries of the State stands next in value to that of lead and zinc. Almost every county contains commercial deposits.

A paragraph telling of the status of the clay industry in Missouri is reproduced as follows:

This State is noted for its production of refractory ware, St. Louis being one of the chief centers of the manufacture of fire brick in the United States. Kaolin suitable for the manufacture of china ware has been mined in Cape Girardeau and Bollinger counties and is found in Perry, Ste. Genevieve, Madison, Iron, Reynolds, Wayne, Carter, Ripley, Oregon, Shannon, Lawrence, and other Ozark counties. Flint fire clays of the finest quality, are mined in Warren, Montgomery, Callaway, Osage, Cole, Gasconade, Franklin, Crawford, Phelps, and Maries county. Extensive deposits of plastic fire clays are found in the Coal Measures throughout north Missouri and in the vicinity of St. Louis. The latter deposits support the enormous fire brick industry of St. Louis. Potters clay and clay suitable for the manufacture of sewer pipe occurs in the northern and western portions of the state. Common and pressed brick are manufactured extensively from the shales and clays of the coal measures and from the enormous deposits of loess which occur along the Missouri and Mississippi rivers. Clays suitable for use in terra cotta work are utilized in St. Louis.

How Cox Got Into the Game

BEING THE STORY OF A YOUNG
MAN WHO FELL HEIR TO A
RUN-DOWN CLAY PLANT

By Iverson C. Wells

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"I expect to let the other fellow make the brick," I replied. "I'll do the selling." Gertz looked at me. "Well, you've got nerve!" he said.

SYNOPSIS OF PRECEDING INSTALLMENT.

A dilapidated clay plant in Ohio is left Albert Cox, a young insurance solicitor, by his grandfather. Cox visits Mauryville with the idea of selling the plant to some one. Selling is his profession and he argues that any one who learns the principles of salesmanship should be capable of selling anything. He finds, however, that the clay plant has not been run for years and that the clay supply is exhausted. The machinery is antiquated and Sawyer, the old foreman, tells him it is only good for junk. Cox considers cutting up the land into city lots, but the gaping holes in the clay pit soon convince him that his task is hopeless, and he is about to give up in despair when he meets Charlie Simpson, a student at the state school of ceramics, who is home for the summer vacation. Simpson, in exploring the neighboring hills, finds an excellent deposit of clay on one end of the Cox estate. Cox becomes interested in the young man's enthusiastic report and, despite Sawyer's despairing advice, plans to turn the discovery to practical use. He obtains an option on the adjoining property and offers to sell his holdings to Brown Bros., a prosperous firm of clayworkers in a nearby city, which is seeking a new location. The eagerness with which the Brown Bros. take up his offer suggests to Cox that young Simpson was right when he said the clay was of an unusual quality, and getting a sample brick made he slips into Cleveland to consult an architect. It is his intention to verify young Simpson's claims with the idea of establishing a value on the property. To his surprise the architect is very enthusiastic over the brick and offers to take 200,000 on a 60-day delivery. On the impulse Cox agrees to furnish the brick. A visit to other architects gives him tentative orders amounting to 1,000,000 brick. This decides Cox and he determines to go into the brick business. He starts out to rehabilitate the old plant with the assistance of Sawyer and young Simpson.



OUNG Simpson passed down the road just then and I hailed him with the idea of choking off the old brickmaker.

"Come in, Simpson," I said cheerfully. "Sawyer and myself are going to Pressville today to buy the outfit."

"That's right, you haven't much time at that, have you?" commented the youth. "You've got only sixty days to fill that order. What capacity machine are you buying?"

Now, that was a question I had not considered, and I do not believe Sawyer had either.

"What is it, Sawyer?" I asked, turning to the old Englishman.

"Well, I thought about 20,000 would answer," replied Sawyer.

Simpson thought a minute and, turning to me, said:

"I do not want to seem impertinent, but don't you think that this is rather a small capacity?"

"To tell you the truth I don't know," I answered. "How about it, Sawyer?"

The old brickmaker plainly was displeased with Simpson's interruption.

"I guess I know what I am doing," he grunted.

I pondered over the figures. Twenty-thousand capacity? Does that mean an hour, day, week or month? I turned to young Simpson with a look of uneasiness and questioned him.

"I presume Mr. Sawyer refers to the capacity of the plant for a day," he replied.

I began to figure again. Twenty thousand a day meant 400,000 for a month of twenty working days. I had sixty days in which to deliver 200,000 brick. That left me a margin of 200,000 brick to spare. I felt relieved when I saw my agitation was unnecessary.

"I guess we are safe," I replied with a relieved sigh to Simpson.

"That plant may let you out on this order, providing you can get your machines delivered at once," persisted Simpson, "but you're not building for the future. True economy lies in ample capacity. A greater profit goes with a greater output. I should think you have proved you can dispose of much more than a 20,000-capacity plant can make."

Now, there was some logic in the young man's words and I saw the point at once.

"Sawyer, I believe Simpson is right," I said, as I turned inquiringly to the old brickmaker.

"He's talking like a parrot!" snapped Sawyer. "You'll find this outfit will be more than you need. Your grandfather couldn't sell the 10,000 a day he made."

"What size plant do you advise, Simpson?" I asked, ignoring Sawyer, for I had an idea I ought to sell more brick than Grandfather Cox could.

"Not less than 40,000," he replied.

"You're crazy!" yelled Sawyer, as he glared at Simpson. "Why, that'd cost you \$50,000, Mr. Cox," the old fellow added, wheeling about. "It's one thing to make brick, but it is another thing to sell them."

This argument had somewhat confused me. Later, when Sawyer left to prepare for the trip to Pressville, I motioned to young Simpson to remain behind. As soon as the old Englishman had disappeared down the road I asked Simpson to give me his idea of what should be bought.

"Mr. Cox, it really is presumptuous on my part to ad-

vise you in this matter, but I felt through your inexperience you were making a grievous error."

I assured him I had weighed carefully his words and wanted to hear him further.

"You understand, of course, I have had no practical knowledge and that what I say is based entirely on what I have been taught at school," continued Simpson. "Now, I have taken a special engineering course and in this I have been taught the construction of ideal plants as my instructors know them. With this advice, which is, in the main, purely theoretical, I might lead you astray, Mr. Cox."

"Go ahead, I'll take a chance, Simpson," I said, encouragingly.

"It depends, of course, on your capital or credit, Mr. Cox, what you shall buy."

"Leave that out of the question. I merely want to see what your idea is and I'll determine if I can afford it."

SIMPSON SUGGESTS PLANT OF LARGE CAPACITY

Simpson took a note book from his pocket and began to figure.

"First of all you will require a plant with at least 60,000 capacity if you hope to do even an ordinary business," he began. "That means you will want an auger machine of the most approved pattern. Then there is the pug mill, the cutter, the dry pan, a screen, an elevator, and several minor items like cars, etc. The power plant you have is hopeless and, of course, you will have to put in a new one."

Simpson paused a moment and then looking at me doubtfully, resumed:

"As a matter of fact I wouldn't consider using steam again, Mr. Cox, when you can get such cheap current from the traction company."

Now, I had heard a great deal of electric equipment from time to time and that suggestion appealed to me, so I asked him how it would benefit a clay plant.

"First there would be the economy in operation," replied Simpson. "Next, you would have individual motors on your machines and be proof against shut downs and repairs when one machine goes out of commission."

"I like that idea," I told him, "but can't that be considered later? You see it would take time to do all that, not to say anything about money. I haven't very much of either. What I am after now is to rig up a plant to take care of the immediate present."

Simpson thought a moment before answering.

"Well, that engine and boiler I guess can be patched up a little and will answer in a way," he finally answered. "But sooner or later you'll have to replace them."

"I grant that," I answered. "Now about the machinery. With what you have in mind that would mean we could make about 1,200,000 brick a month, wouldn't it?"

Simpson nodded.

"That means I'd have to strike two juicy orders a month like I got from that Cleveland architect, doesn't it?" I asked, and as Simpson again indicated his approval, I continued:

"Well, how much would an equipment like that cost?"

"My figures show about \$50,000, and that includes twelve new kilns and a dryer," was his reply.

"A dryer?" My brow knitted as this new proposition was put up to me.

"Why yes, you have to dry the brick before they are burned—unless you do as your grandfather did and depend on the weather."

Simpson then went into a detailed description of the open yard method and the modern drying systems.

"Can't we leave out the dryer for the present?" I asked. "You see we're short on time—and money."

Simpson's brow now knitted. Presently he answered doubtfully:

"Open yard drying makes a good brick, but it is not a common practice today to say the least. You see in the first place you must depend on the weather and in the next place it takes time."

In reply to my further questioning he said with the extra kilns at a cost of about \$1,200 each, and with good luck we could turn out the 200,000 brick on time, but it would be a big gamble.

I did not answer for a moment or so. Presently I looked up.

"Simpson, I'll take the gamble!" I finally answered. "I want you to go with me and Sawyer to Pressville today."

Four hours later Sawyer, Simpson and myself walked into the Steinway Machinery Company's general offices at Pressville. Gertz, the salesmanager, took us in tow and we were given a hurried round of inspection of the shops before we returned to his office and began to discuss our business.

"Mr. Gertz, we haven't much time to spare before our train is due back Mauryville," I suggested.

"All right, sir, all right, sir. Come right into the office," Gertz replied, opening a door that led from the general reception room. He was a most affable gentleman but I noted one thing about him which I stored away in my head for future use. Gertz had a very weak chin.

Sawyer took a seat some distance away from us and near a window. He had been sullen every since the incident of the morning and on the train to Pressville that afternoon had shown little desire to talk either to Simpson or myself.

"Bring your chair up here," I urged Sawyer.

"Oh, this is all right. I can hear."

"Well, Mr. Cox, what can we do for you?" asked Gertz as he sat back comfortably in his chair.

I pulled out a list which we had made earlier in the day and handed it to him.

"We want that outfit if we can get the right prices," I replied, placing a special emphasis on the latter portion of the sentence.

SAWYER GETS SATISFACTION OUT OF GERTZ'S COMMENT

Gertz took the list but before he began to inspect it gave me a doubtful glance over his eye-glass rims.

This list included the following items:

A crusher, two dry pans, a belt conveyor, a screen, a pug mill, an auger machine, an automatic cutoff, a belt conveyor to take spoiled brick back to the pug mill, ten down draft kilns of 100,000 capacity, four cars and a hoist drum and cable, 20 cars for off bearing tracks, and a few minor items which I do not recall just now.

"What size auger machine do you wish?" asked Gertz finally, looking up from the list.

I looked inquiringly towards Sawyer but apparently he did not hear the question.

"Sawyer," I asked, "what did we decide this morning?"

Sawyer replied without looking up:

"Fifty thousand."

Gertz made a memorandum and picked up the list again. Sawyer squirmed uneasily in his seat. Finally he got

up and walked over to the desk and squared himself in front of Gertz.

"That's more than we need but Mr. Cox seems to think he ought to have it," he said casting a sidelong glance at Simpson. "For my part I am of the opinion that he could cut it in two and not worry."

Gertz looked askance at me.

"What output do you expect to make, Mr. Cox?" he inquired.

"It is not a question of output just now. It is a question of capital. If I could afford it I'd put in two of those machines. I can sell all the brick that plant can turn out. I've got advance orders for enough to keep a 50,000 outfit busy all the summer."

"I'm mighty afraid you will find many disappointments, Mr. Cox, before you have been long in the game. The brick business is pretty dull just now. We have been receiving some very pessimistic reports from our salesmen."

Sawyer for the first time that day smiled.

"Oh, I guess I know what I'm talking about," he hastened to say. "I ain't been in the brick business forty years for nothing."

"You can figure on the fifty thousand capacity," I replied laconically. "I am willing to take the chance."

GERTZ MAKES A PRICE OF \$26,000 FOR THE PLANT

We spent the rest of the afternoon examining the machines and the rest of the equipment. Young Simpson modestly remained in the background and I was pleased to see that Sawyer showed more interest as the day wore along.

It was after 4 o'clock before we returned from the shops and re-entered the office. Gertz took our memorandum to a stenographer and soon returned with a neatly tabulated page showing an estimate on the equipment. It totalled \$26,000.

"How soon can you make delivery?" I asked.

"I can deliver everything except the auger machine and crusher within two or three days. These two we do not have on the floor and they will have to be made. It will be two weeks before I can promise you these."

"That won't do," I answered decisively, "I've got to be making brick by that time."

"Impossible!" he exclaimed. "Even if we could ship the auger machine and crusher today you can't expect to get under way short of two months."

"Why?" I asked.

"Why, man, there's the kilns you haven't taken into consideration. It takes time to put them up."

"Yes, you can't build a kiln in an hour's time," growled Sawyer. "Neither can you put up a plant over night."

"How long will it require to build those kilns?" I asked Gertz, this time with less confidence than before.

"We'd want six or eight weeks at the least. As a matter of fact I wouldn't want to guarantee the job under eight weeks."

"That settles it," I snapped. "You need not figure any further." I started to pick up my hat and turned towards the door. "Come on boys," I added, beckoning to Sawyer and Simpson.

"What's the matter?" asked Gertz in astonishment.

"You say you can't do a certain thing which I say must be done." I replied. "There's no use talking any further. We'll go elsewhere where we can get what we want."

Gertz came around the desk and took me by the arm

with the engaging manner of a Hebrew clothing salesman trying to sell a farmer a \$2.85 all-cotton suit for \$8.98.

"My dear Mr. Cox," he began. "You are acting too hastily. I only spoke from a rough estimate. Sit down and let us see what we really can do. Perhaps, we may see some way out of this."

I assured him that was just what I wanted—facts, not guesswork. Gertz got out his pencil and began to figure. Presently he looked up and said:

"I can guarantee to have the entire equipment on your yard in two weeks time, with the single exception of the kilns."

"What about the kilns?"

"By putting on an extra crew of men I can have them ready within six weeks."

"That won't do!" I answered.

"Well, by putting on a large crew I might cut that down a little—say another week or a few days."

Young Simpson here nudged me and I leaned over to him.

"If he can make it four weeks—and he can," he said in a low tone, "that will let you out."

I made a rapid calculation. It would take thirty days to turn those kilns, so I understood. I had sixty days to deliver those brick. With four weeks off for installation of equipment I would have only two days to spare. It was a gamble, but I was into the affair up to my neck.

"Make it four weeks," I urged Gertz. "We can't risk a day longer."

"Four weeks it shall be!" he exclaimed, beads of perspiration standing out on his forehead.

"That will have to go into the contract, Mr. Gertz," I told him, and he nodded his head.

For nearly an hour we talked over prices. I wanted to be satisfied I was getting the bedrock figures. Gertz did not trim a penny.

"Twenty-six thousand is the best we can do," he said and he looked as if he was in earnest.

"Well, of course you understand, I want to do the best I can and you can't blame me if I visit one or two other places and get estimates."

Gertz looked really shocked at this suggestion.

"Mr. Cox, no one can undersell us on the quality of goods we offer. We are positive our figures are as low as are consistent with good business judgment."

GERTZ SHOWS ANXIETY OVER COX'S ATTITUDE

Now, as a matter of fact both Simpson and Sawyer had told me that the Steinway machinery had the reputation of being of the highest quality and I really expected to patronize Gertz. But, as I had told him, I wanted to look around a little as I felt it would be of advantage to me in the future. I was about to depart, assuring Gertz I would give him a fair try at the order, when he seized me by the arm and whispered:

"I'll clip that price to \$25,000 net."

Evidently Mr. Gertz did not have a single-fixed price after all.

"Well, that sounds a little better I replied.

The three of us—Sawyer, Simpson and myself, hurried to the railroad station. We found our train half an hour late and entered the little lunch room near the depot to get a sandwich.

A few minutes later, when we re-appeared on the station platform, I was surprised to see Gertz pacing up and down before the waiting room door.

(To be continued in the June 1 Issue)

Record-Breaking Repair Job

CORLISS ENGINE RUNS WILD IN
CLAY PLANT AND HURLS 15-TON
WHEEL THROUGH WALLS

With a ponderous, high-speed, 400-h. p. Corliss engine "running wild" in the power plant of Yard No. 35 of the Illinois Brick Co., at Dolton, Ill., on the afternoon of April 23, the monstrous fly wheel let loose and sent fifteen tons of iron crashing through the walls of the buildings, crumbling them as if they were made of tissue paper.

The great steel main line shafting was bent and twisted, heavy iron pedestals broken like fragile glass and the power equipment wrecked, apparently, beyond restoration.

Taking into consideration the wonderful demonstration of force manifested by the unusual accident, the task of placing the wrecked engine room and its equipment back into a normal and usable condition in less than four days' time, was not only herculean and remarkable, but a feat that will be referred to for many years, undoubtedly, as a record-breaking repair job.

Here is what happened when the fly wheel, with its fifteen tons of iron, let loose:

The big six-inch main steam line was torn apart and scalding steam sent in huge clouds throughout the room.

The great line shafting in the main engine room was torn from its fastenings and bent and twisted into an unrecognizable shape.

Two heavy pedestals of solid iron casting which supported the shafting gave away and crumpled to the floor.

The main drive pulley was crushed into small bits.

The six 8 in. x 8 in. roof and floor supports were cut in twain by the flying castings as if they were slender reeds.

The drive shaft of the pug mill was bent and rendered useless.

The brick walls of the engine room were pierced by great gaping holes.

One piece of the rim of the fly wheel, weighing half a ton, was hurled through the air and landed 600 feet away in a farmer's pasture.

The accident occurred in the afternoon. The plant had started making brick two days prior, after having been



This is how the roof above the engine room looked after the accident.

closed down to remodel the dryer. The condition of the yard was not very encouraging for an early resumption of work, to say the least.

Frank Lambert, general superintendent of the Illinois Brick Co., was notified and he hurried over to Yard No. 35.

"Anyone hurt?" he made haste to inquire after his first hurried glance at the ruins of the engine room.

When assured that not a single employe had received even as much as a scratch, he breathed a sigh of relief. The next moment he was directing his men to clear up the debris and prepare to have everything running by the following Monday.

There was a moment's hesitation among the men, for what had been asked of them appeared almost to be impossible, but Superintendent Lambert already was busy on the telephone giving further orders.

"There is a fly wheel at Yard No. 17 we can use," he said a second later, turning away from the telephone. "Get it."

And thus the work of restoration started.

It is easy to say, "Do a thing," but accomplishing that which is desired is another matter.

Here is what confronted the men of Yard No. 35 when they started to obey orders and "Have the plant making brick by Monday":

The wreckage had to be cleaned up.

The line shaft had to be stripped of its pulleys.



The left hand picture shows the havoc wrought in the engine room. The photograph to the right is a view of what was left of the great drive pulley and shafting.

A new line shaft had to be installed.

The pug mill shaft had to be renewed.

The 36-inch main belt, 116 feet long, had to be either repaired or replaced.

The floors, the roof and the walls had to be repaired to make them safe.

Thursday morning the work started with a rush. The crank shaft was removed and sent to Harvey to be turned and keyset to fit the new wheel. The shafting people stated that they had a 6-in. shaft of the right length. Over went Shop Superintendent Peterson to look after the key-setting.

The belting people were positive they could not supply the required belt by Saturday afternoon unless they worked overtime.

"Work overtime," came back the laconic response. "We have got to have the belt."

Superintendent Pepin at Yard No. 17 ordered in a flat car and commenced loading the fly wheel at 3 o'clock that afternoon. Three hours later it was on its way and an hour later it was in Yard No. 35 ready to be unloaded.

In the meantime carpenters, bricklayers, machinists and electricians were all jumping over one another getting things

to rights. By Friday noon the crank shaft was in place. Saturday morning the line shaft was put into position and lined up.

Sunday the pulleys were put on and keyed up. Monday morning at 1 o'clock the fly wheel was in place and bolted. By 4 A. M. the main belts were on and by 3:15 P. M. that day the engine was turning as if nothing ever had happened.

Fifteen minutes later, Superintendent Lambert arrived at the plant and, after looking the wheel over, he decided that the two halves did not fit quite true and ordered the hub bolts taken out and the bottom half jacked over. It was 6 P. M. before the wheel was tightened again.

Just as the clock hands pointed to 6:05 orders were given to speed up the engine and start the machines. Superintendent Lambert smiled as he saw two or three hundred brick run out.

A pin that had worked loose in one of the bevel gears of the governor of the engine was responsible for the accident, the big Corliss getting completely out of the control of the governor.

Selling Brick

SALESMANSHIP APPLIED
TO CLAY PRODUCT PLANT

By Iverson C. Wells

This is a series of heart-to-heart talks on one of the most important and most neglected departments in the successful conduct of a clay product plant. Mr. Wells also will review current advertising by clay plants, as publicity is one of the essentials of good salesmanship. Manufacturers are invited to submit copies of their advertising for critical review.

NEAT attire, a pleasing address and a magnetic personality may not make a brick salesman, but they go a long ways towards it.

Every thing else being equal the man who has immaculate linen, a respectable looking suit of clothes well-groomed, and who gives forth a pleasing personality, stands a better show than the salesman who is slovenly in his attire and enters an office or place of business with a frown on his face.

However radical the statement may seem it is a fact, nevertheless, that most of us are impressed by appearance. We prefer to deal with a man who looks like he is successful rather than with one who does not.

First of all a salesman should cultivate a quiet dignity of poise and manner.

Once it was believed necessary to business success to carry the citadel by storm. In other words, the salesman was taught to rush into the buyer's sanctum and, taking his victim by surprise, proceed to rattle off a "sing-song" dissertation upon the merits of his goods, and before his astonished prey could recover, push into his hesitating fingers at

Cultivating a Pleasing Address

Heart Talk No. 2

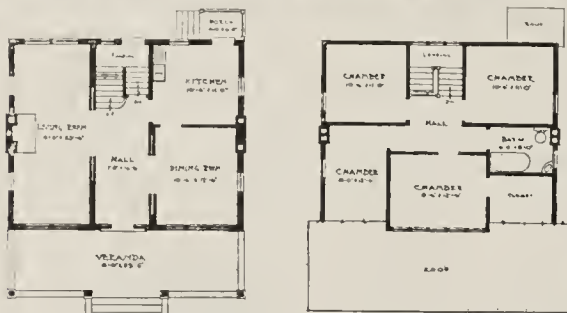


the psychological moment a fountain pen and the contract or order sheet.

That may have worked a few years ago before the buyer learned how to buy. Today a man would be a knave who followed such tactics in selling any product.

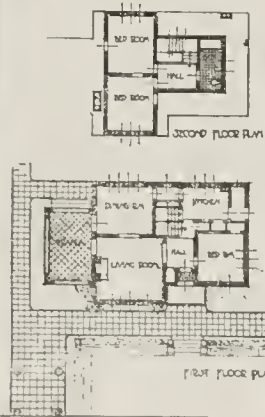
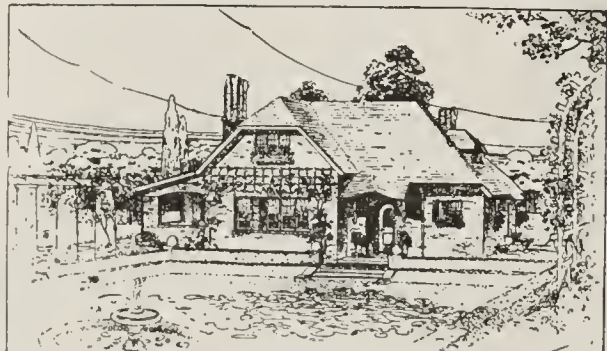
The Home Beautiful, No. 20

An artistic combination of brick and frame which is being much used at the present time. One of the features of this plan which is unique and commendable is the large living room, extending along the entire one side of the lower floor; this with the large fireplace makes an ideal room for the family and guest and will be found to lend itself to decorative schemes not possible in the smaller square rooms. The fireplace is so placed as to send its cheer to every room on the floor and can be built large enough to accommodate a large wood fire if desired. The chambers on the second floor have plenty of light and excellent ventilation.



Size 25x31 feet without veranda. Height of stories 8 feet 6 inches and 8 feet. Cellar 7 feet divided into two rooms. Foundation and first story, brick. Second story weather-boarded over paper and matched sheathing. Roof shingled with stained shingles. Four front rooms finished in oak, balance cypress. Hardwood floors in main rooms. No attic. Plastering, three coats. Good hardware and plumbing. Estimated cost, \$2,250.

Algona Brick and Tile Works
ALGONA, IOWA



Investment Hints

Have you ever heard of anyone buying a lot of land that they did not expect to advance in value? Then why should a man build his residence of wood when he knows it will deteriorate steadily from year to year.

Think for yourself of the many cases under your own observation where the increase in value of the lot has been overbalanced by the deterioration of the frame house. The fashionable residence sections of a few generations ago, which were erected of wood, are not being deserted by the elite, but the brick houses of years past, that sheltered the best of society of that day, still retain their beauty, dignity, and worth, and are still the homes of the aristocrats.

Brick cost but little more than wood. Why not investigate? It will cost you nothing and it may save regrets later.

BRICK: Tried and True.
**GEORGIA-CAROLINA
BRICK COMPANY**
AUGUSTA, GEORGIA

BEAUTIFUL NEW SHREVEPORT HOTEL Faced with GINGER BRICKS



THE "YUREE" will rank with the most notable hotels of the entire country. Again GINGER BRICKS have won out in competition with the best Face Brick of the United States. BEFORE SELECTING OR ACCEPTING ANY FACE BRICK INVESTIGATE GINGER BRICKS.

WELCOME, FAIR VISITORS. VISIT OUR PERMANENT DISPLAY ROOMS

FRASER BRICK CO.

Sole Manufacturers GINGER BRICKS.
Office and Display Rooms, 715-716-717 Wilson Building
Dallas, Texas.

Compliments BRICK AND CLAY RECORD, Chicago

You don't have to paint brick houses

They have the natural color of nature—placed there by Nature and burned to stay there by Man. Wood houses require painting every two or three years or they become unsightly and an early prey to the elements. Concrete or stucco houses have to be recoated every so often or their clipped or cracked surfaces prove an eyesore to every passerby.

You don't have to repair brick houses

Because they are imperishable—because they are impervious to heat—to moisture—to frost—because they are time-defying. Brick has stood the test of 3,000 years. The modern brick is better—stronger—prettier and more sanitary than the brick of thirty centuries ago.

You don't have to insure brick houses

Because they are fire-proof and the insurance companies recognize that fact by giving a low rate. Brick houses cost less to insure by 37½ per cent than concrete houses. Brick houses cost less by fifty per cent than wood houses or stucco houses. Where all burned clay is used in brick construction—in the walls, in the roof and in the floors, you don't have to insure your house. You did that when you built of burned clay.

You don't have to worry about brick houses

Because the cause for worry was left behind when you built. Build of brick and have a comfortable home—warm in the winter—cool in the summer—Sightly and Pleasing to the eye—Satisfying to your purse, and Security-giving when fire rages around you.

The Champaign Clay Products Association
Champaign, Ill.



IT IS A BRICK

Whenever you see a brick, either building or fireproof and it is a STANDARD BRICK

you can rest assured that it is the best brick for the particular purpose for which it was made that money can buy.

Standard Brick are guaranteed—therefore, if you are interested write for our book on "Standard Brick." It tells how to get car-load rates on small lots. It's free.

Standard Brick Co.
MACON, GA.
W. E. DUNWOODY, President

SEND 30c

for book containing 100 designs for brick bungalows.

Drop us postal for booklet telling in detail of the advantages of a brick house.

Some Recent Examples

of

Local Advertising

conducted by readers of

Brick and Clay Record

Get The Best Out Of Your Farm

When you fail to fertilize your farm—to till it right and drain it right, you will fail to get the best out of it. Successful farming today means scientific farming. And there is no way today giving forth its fullest capacity of crops that isn't properly drained.

Use Drain Tile Freely

Use it correctly—use it judiciously and Mother Earth will respond with a willingness that will surprise you. Take away the surplus water. Use our burned clay drain tile and you will never have to do the work a second time. If in doubt let us show you.

CAMPUS BRICK & TILE WORKS
Mamer Bros. Owners

Write for Prices
Campus, Illinois



NO LEAKS

During and after the recent heavy rains there were no leaks reported from any one of the hundreds of structures that have been under Simons' Clay Tile Roof for periods of two months to ten years.

Ask the owner who was under an imitation tile roof about his roof trouble.

Let us talk to you. Call, phone or write.

**SIMONS
BRICK CO.**
125 W. 34th St. Los Angeles

CHAS. L. WARREN, REHAB. WHITTIER BOULEVARD
NO IMITATIONS HERE!
The GENUINE Simons Burned Clay Roofing Tile Ware Used.

Buying today is a business just as much as is selling and both mean the pitting of two wits against each other.

The buyer and the seller meet on a common plane. Each respects the other's profession.

There really is no direct antagonism between the buyer and the real salesman as a class, contrary to the popular idea. Where antagonism exists it is there because of the individual. And, in either case, where this exists, it proves that one or the other is a weak member.

The salesman who enters an office quietly, in a businesslike manner, and who shows the ordinary courtesies of business etiquette, stands more of a show of obtaining an audience than the one who ignores all rules and blusters forth.

Strive above all to be pleasing, without convincing your prospect that you are a mollie-coddle.



MAKE yourself agreeable. Be a good listener rather than a good talker. If this is done, nine times out of ten, when you have left your prospect he will turn to one of his fellow associates and tell him what a good fellow you are.

It is natural for all of us to talk. It is more natural for the inexperienced salesman to talk.

The hard thing to learn is not to talk—only when it is time to talk.

Ten well-chosen words at the right moment are worth one hundred at the wrong time.

I once knew a salesman who boiled his story down to the minimum. When the proper moment came for him to send home his argument it took him just two minutes by the watch to do it.

He might be closeted with his prospect an hour, but fifty minutes of that hour was devoted to listening to the other fellow.

By being a good listener he gave the other fellow an opportunity to turn up his weak points and he made a mental note of each as he listened.

Never combat a buyer with a negative statement. Lead him around to the right road of thinking, but do it without letting him know you are doing it.

The practice of belittling your rival's product is inexcusable. If your prospect gives you the opportunity, no matter how inviting it may be, hold yourself in check.

What you have undertaken to do is to sell your product. You are not concerned in any way with what the other fellow makes or does.

Use your time in explaining whatever merit your product or your system may have. If it has merit explain it. If it has more merit than that of your rival, your prospect will know it if you have told your story thoroughly.

IN either a small or large community personal acquaintance is an asset, providing you always make yourself agreeable.

If you can meet a buyer on the street and have him address you familiarly you have the bulge on your rival.

It is much easier to sell something to someone who knows you than to someone who does not.

In the one case you have to spend most of your time getting acquainted at your first visit. In the other no time is lost in getting down to business.



NO two men may be approached alike and it is on this point that most salesmen fail.

If it is practical, study your prospective buyer before you try to sell him.

A certain successful brick salesman who visits the architects and contractors has a unique system which he follows systematically.

He has each man on his calling list classified and he has an approach for each one. For instance, there are a certain group of men that like to hear "good" stories. For these he maintains a special indexed memorandum book. Under each letter of the alphabet he places every subject for which he has a story. For instance, under "W" he has "Weather," "Wind," "Water," "Work," etc.

On the pages which carry the memorandum of these stories he writes the introductory words of the story or narrative—or just enough to refresh his memory.

This system is used because our friend was known as a poor story-teller. Not so today, for among those who enjoy a good yarn he has the reputation of being a walking cyclopedia for yarns.

Suppose our friend is approaching Jones. Now Jones is fond of horse stories or some other certain class of narratives. This salesman, who has taken pains to jot down every new story he runs across, opens his index and finding the desired classification, takes a hurried peep at the catch words on Page Umptey-um as he opens the door and is primed for the usual introduction.

With another set of prospects this course would have been business suicide. These men were clean-cut business men who had no time for stories or by-play. The salesman entered their sanctum with a quiet dignity, and maintained the utmost decorum as long as he was in there.

And so it was with all those with whom he sought to sell. He used common sense in reaching the buyer and that meant he studied each individual as an individual and sought to make himself agreeable to him.

FIVE ads from local newspaper are shown this issue as recent examples of publicity by "Brick and Clay Record" readers. As a rule they are above the average in display and in text matter.

The ad of the Standard Brick Co., of Macon, Ga., probably is the best of the set, from a technical standpoint, because it is well displayed, has a striking illustration that carries out the idea of the purpose of the ad—to make familiar the name of the product offered, and no waste space is used.

The Georgia-Carolina Brick Co. seek a different purpose in its copy. This concern is attempting to create a demand for brick and goes about it in a business-like way. It would seem, however, the Macon ad uses too much space for the text matter. A considerably smaller space would tell the same story.

Advertising should be bought as you need it. The proper course would be to contract to use a certain number of inches in a specified time. That would give you the benefit of the time and space discounts and you would not be forced to use a half page on a certain date when a quarter page would answer.

The proper way to plan a campaign for advertising is to first write or have written every ad that is to run in the series—whether it is six, a dozen or even one for each day in the year. Then have these ads set up by the printer with the instruction to use what type is necessary to properly display them and not use any more space than is required for each individual ad.

With the proofs of the entire series measure the actual number of inches or agate lines and secure your quotation from the newspaper publisher.

Particular attention is called to the ad of the Algona Brick & Tile Co. This is the second one we have printed in these pages, but the wonderful success of Manager Madson in his first carefully prepared advertising campaign in his local paper is worth this attention.

It will be recalled that Mr. Madson, who is one of "Brick and Clay Record's" graduates, decided to do some co-operative advertising. That is, he sought to interest several brickmakers in an exchange of cuts and copy. He figured that if a score or more would invest a few dollars in cuts and copy that each could use what the other had used and thus get the benefit of several hundred dollars' worth of service at the cost of one ad.

The offer was not only a good one, but one that should draw a ready desire for co-operation. To my surprise, Mr. Madson writes that not a single brickmaker has been sufficiently interested to take up the matter with him. He says:

"We have not been able to get others interested in our publicity work. We are getting out our cuts and running

our own ads and paying our own bills and we are GETTING THE BUSINESS, TOO (The capitalization is his own) and every dollar spent for advertising comes back with 200 per cent added to it.

"If some of the brickmakers of Iowa wanted to sell gold dollars at 50 cents a piece they couldn't sell many unless they let the people know they had them to sell, and it is the same way in the clay business. Let the people know what you have to sell.

"Since we started our series of ads (Three had been run at that time) we HAVE SOLD FIVE BRICK HOUSES HERE IN ALGONA, and there are prospects for that many more before the others are completed.

"We expect to have out another series of ads in a short time. This will be for a much larger house than the others we have advertised.

"I would like to see some of the other members of the Iowa State association invest \$5 in a couple of cuts and join with me in this work.

"I might add that if there are any brickmakers that wish to use the cuts and ads I have we will loan them to them and all it will cost them will be the transportation charges."

Do you catch the full import of that letter? Here is a beginner in local publicity work which creates demand for his own products in his locality who says that the first three ads have sold five brick houses and "as many more are in prospect before the others are completed."

Further, he adds that his investment is bringing him 200 per cent for every dollar spent in his advertising.

For the information of those who may be interested I might state that Algona is a city of a little over 2,000 population and is about the average small city of that size in business possibilities.

MACHINERY SALESMAN WEDS SOUTHERN GIRL.

A. W. Aylesworth, Traveling Representative of the Bonnot Co., Wins Fair Bride in New Orleans.

A. W. Aylesworth, the popular young salesman of the Bonnot Co., of Canton, Ohio, was married at Toledo, Ohio, March 31 to Miss Marie Therese Mather, daughter of Mr. and Mrs. Joseph S. Mather, of New Orleans. Following a bridal trip through the South and a visit to the bride's southern home, Mr. and Mrs. Aylesworth went to Canton, where they will reside in the future. Cards announcing the wedding state that they will be at home to their friends at 805 Short street after May 15.

Mr. Aylesworth is one of the most energetic salesmen visiting the brick plants of the country and for many years has been looked upon as one of the best "catches" among the younger generation of machinery men in the industry. His continued refusal to be ensnared by Dan Cupid long has been of considerable concern to his friends who felt he was too good a man to be wasted. "Wait until I meet her," was his only reply to these numerous solicitous friends.

Obviously the Fair Southland was to be Mr. Aylesworth's field of romance and when "the time came" he went proudly to Hymen's altar.

"Brick and Clay Record" never has had the pleasure of meeting Mrs. Aylesworth, but the South gives forth nothing but lovely women and estimable wives, and Mr. Aylesworth has chosen well, as he has in all things.

"I've just begun to live," writes Friend Aylesworth from his home in Canton. It is the toast of his legion of friends that Time will be generous to him and that the happiness he has found will grow and continue to grow.

A Boost for Face Brick



The Home Beautiful

FACE BRICK

Economical
Everlasting

The above is a facsimile of the front page cover of a handsome book boosting brick, and issued by the Chicago Face Brick Association. It is printed in colors and bears no reference to any manufacturer on any of the pages. It would be excellent for general distribution by any brick maker who could have his name on the cover. "Brick and Clay Record" has arranged to print extra copies for those who wish them at \$6 per 100. Imprint of the purchaser will be placed on the cover in lots of 1,000 or more.

EDITORIAL SECTION

Volume XLII. CHICAGO, MAY 15, 1913 Number 10

Thinking
Without Action
Achieves Little.

Letters received by this journal within the last few days from readers emphasize very strongly the necessity of the early organization of some sort of central association or bureau for the dissimilation of ideas and campaigns for boosting clay products in general.

Three letters in so many days came from one brickmaker who says he has prospective customers in his city who want to know the cost and receive the plans for brick houses and asks this journal to supply him with the necessary information at once.

Another letter encloses a strikingly strong circular issued by a machinery house which calls attention to the manner in which brick houses withstood the force of the recent flood in Ohio while frame and concrete houses were swept away.

J. A. Steinberger, superintendent of the Rockwell City (Iowa) Brick & Tile Works, is the writer of the three letters asking for help. The first to be received follows:

We have a customer that wishes to build a small house 24x26 ft., with 14 ft. wall, including foundation. It is to be plain finish with porch. Kindly send your best plans for a house not to cost more than \$800 complete, built with 5x8x12 and 5x4x12 at \$40 and \$22 per thousand, with pebble dash. Also plans for the same. Please let me hear from you at your earliest convenience, AS THE CEMENT PEOPLE ARE AFTER HIM.

By the same mail came a second letter from Mr. Steinberger. It reads:

I have a customer that would like your estimates on a five-room bungalow built with clay block 5x8x12, and wishes to use the 5x4x12 block as partitions, with small basement 14x14. The large block will cost at the job \$40 per thousand and the small block \$22. This building he wants cemented and pebble-dashed. Also send plans for same.

Two days later Mr. Steinberger wrote as follows:

We have a prospective customer who is going to build a very fine residence in the near future, but is considering LUMBER. I am trying to interest him in brick and block and have stated to him that there was a BOARD OF ARCHITECTS THAT COULD GIVE HIM SOME INFORMATION in regard to cost and plans. This gentleman will answer all correspondence very promptly and, if there IS SUCH A BOARD IN EXISTENCE, PLEASE PUT HIM IN TOUCH WITH IT AT ONCE.

Because there is NO ONE TO WHOM HE CAN APPLY Mr. Steinberger turns to this journal for aid.

Suppose, however, there was such an organization as was outlined in the April 15 and May 1 issues of "Brick and Clay Record." Mr. Steinberger WOULD NOT BE IN THE DILEMMA HE IS TODAY. Neither would the 10,000 other clay product manufacturers in the country be HELPLESS in the face of many similar problems that confront them.

This journal has found it necessary to inform Mr. Steinberger that there is no organized board to whom he can apply for help. Whatever help he gets must be from some INDIVIDUAL source and until some central organization for the purpose of handling just such problems as his has been formed he will have to content himself with this uncertain source of information.

Our second correspondent, an Ohian who asks us to withhold his identity writes:

I am enclosing you a circular which was received by me a few days ago. In view of the strong editorials you had in your last two issues regarding the organization of some sort of central association or bureau of information, I believe this circular is of particular interest just now.

The folder emphasizes your statement that "outside of a few individual efforts, nothing is being done at Dayton to convince the people of that city and the rest of the world that they must profit by the lessons of the recent flood and use burned clay in the future."

The folder is one that was sent out by the American Clay Machinery Co. of Bucyrus, Ohio, and a reproduction of the same is given on another page of this journal.

The cost of issuing such a folder in the quantity distributed was no inconsiderable item and that this cost was borne entirely by an INDIVIDUAL corporation is to the DISCREDIT of the clay product industry—which is the third largest of the great mineral industries.

The fact that some INDIVIDUAL corporation HAD TO ISSUE just such a folder and DISTRIBUTE it is a further discredit to an industry that should have enough INITIATIVE, enough ENTERPRISE and sufficient INCENTIVE to act CONCERTEDLY on a matter that is WORTH UNIVERSAL attention.

It is a fact, however, that whatever has been done today to advance the interest of clay products has been done by INDIVIDUAL effort.

Whatever stroke of enterprise used to promote the welfare of the industry as a whole has been contributed by the **INDIVIDUAL**.

And, distasteful as the accusation may be, the clayworker, as a class, has hung on lazily like a **LEECH** and **SUCKED** the **BUSINESS-GIVING BLOOD** of his more progressive and aggressive brother and whatever he is or has today is **DUE** to **THIS PRACTICE**.

It is wrong. It is unbusinesslike. It is unprofitable in the long run.

No one can hope to live off another without either sapping the energy of the **VICTIM** or growing **INDOLENT** from his own inactivity and **SUFFERING** in the long run.

Clayworkers, **DO SOMETHING YOURSELVES**. Cease depending on one or a group of your fellow men.

Throw aside your narrow-minded, selfish way of looking at things. Extend the hand of **DETERMINATION** to your fellow clayworker who **WANTS TO MOVE AHEAD** and tell him you **WILL MOVE ALONG WITH HIM**.

Do not let the fact that your effort will cost you a dollar check the impulse to **DO SOMETHING**.

The **BIG** men in the steel industry, in the cement world—in **YOUR** field, never attained the position they occupy today by being timid in the face of a dollar.

No one ever succeeded long who relied on the other fellow to push him across.

It is well to sit back in your chair and **THINK** of these things and give a **MENTAL** indorsement thereto, but **THINKING WITHOUT ACTION NEVER ACCOMPLISHES ANYTHING**.

If you approve or disapprove the ideas suggested by this journal show enough interest in **YOUR OWN WELFARE** to write to this journal and give your views.

Your trade journal is the only channel through which you can have an interchange of ideas.

Your trade journal is the only avenue through which you can get a concerted action on any problem that may confront you, in view of the fact that there is today no other medium that **PRETENDS** to interest itself in your behalf.

You know there is **SOMETHING** wrong with you. You **KNOW** there is something wrong with the system used in the industry. Why not get right down to brass tacks and talk it over.

The columns of this journal are open to you. Write what you **BELIEVE** to be the **PROPER** solution whether it **AGREES** with the ideas of this journal or not.

A frank, wide-open discussion is **NECESSARY**. By this—and only this can we hope to arrive at some **TANGIBLE** plan.



Factory Efficiency in the Clay Plant.

As a general rule the average clay plant is a marvel of factory inefficiency. Clayworkers, figuring absolutely from a different standard than other manufacturers, appear to believe any sort of construction is good enough for them.

Following this principle, when a clayworker decides to erect a new plant, he does only one thing in a commonsense way. He picks out a site that affords the right sort of clay or shale, and, satisfied that **THERE** his responsibility **CEASES**, he refuses to worry further until he discovers he is **NOT MAKING A PROFIT** off his product and wonders why.

The manufacture of clay products is a **BUSINESS** just as much as the manufacture of sewing machines, or ice picks or furniture and the **SAME GENERAL RULE** holds good in it that holds good in either of these industries.

No wagon manufacturer would think of "throwing together" a plant that is to turn his dollar into dollars.

First he would study the **LOCAL** conditions. Next he would consider the **PRODUCT** he is to make, the **MACHINERY** that is to be required to produce that product, the **NUMBER** of **MEN** it will be necessary to employ and their **RELATIONSHIP** to the machinery and to the plant itself.

Then he would give considerable attention to the **INSTALLATION** of his machinery, making sure that every machine was so placed as to make the **LEAST EXPENDITURE OF ENERGY** of those that had to run it.

He would recognize the fact that the **EASIER** his employes can do their work the **GREATER** efficiency will they show.

And he would figure that with a force of men that is **HIGH** in efficiency he would make a **BETTER** product on their labor and be able to turn out a **GREATER** output at a **LESS** cost.

It is a decidedly small clay plant that does not have at least an investment of \$20,000, and yet how many plants of the average class—the ones that represent an investment of \$50,000 or more, are more

than a joke when it comes to judging them from modern factory efficiency standards?

A frame shed is erected of a certain size to "house the machinery." That is the **FIRST** consideration and the **LAST**. No one gives thought to the fact that something else is to be considered.

We have in mind a certain hollow block plant that is a model of factory construction. This plant probably turns out more hollow block than any other two in the same state.

But there is one striking feature about this plant which one notices when he drives into sight at the bend of the road a quarter of a mile away.

It occupies **LESS** space than many much smaller plants require for their power plant alone, and, judging from the standard set by the average clay plant, which spreads over acres, one is inclined to think that he is making a mistake and is approaching some one-horse concern instead of one of the biggest plants in the state, when you take into consideration output and earning capacity.

There is not a wasted inch in the entire plant. The machines are placed in such a manner that the men who man them do not have to make a **FALSE** movement in attending to their duties.

The factory is so arranged that the transit of the raw material from the pit to the shipping cars is made in the shortest possible time and with the least possible handling.

The manager of this plant explained his ideas in a very simple way.

"See that bookkeeper there," he said, pointing to one of his office employees. "Suppose that bottle of ink he is using was across the room there instead of being within easy reach. What would happen? Why, that fellow would have to get down off his stool a hundred times a day, walk across the room and, dipping his pen into the well, return to this work.

"It is the same way in the clay plant. The average employe in the average clay plant finds his work handicapped just about as much as the bookkeeper would be with his ink well across the room. Our plant was designed to save him those steps."

And ten minutes in this model plant convinces you that he designed well.

So finely figured is every movement required to make hollow tile no employe has to crook his elbow unnecessarily.

This manager has figured that **LOST** motion in an employe **MEANS JUST AS MUCH** to him as lost motion in a **MACHINE**.

With fifty men losing thirty minutes each day in unnecessary steps there is a total loss of twenty-five hours of labor to a day. In six days this means 150 hours or fifteen days of ten working-hours per day. In one month of four weeks it totals sixty days. In

twelve months it means that the firm that is footing the labor bills has **LOST 120 DAYS' LABOR**, which, at the low estimate of \$2 per day, brings the item to \$240.

Figure it out in your own plant. Are you paying this tariff to inefficiency?

And yet, this is but one small item in factory efficiency that is overlooked daily in practically every clay plant of the country.

There is a remedy and the remedy lies in the employment of an efficiency expert—a practical engineer who **UNDERSTANDS** the needs and requirements of a clay plant.

The average clayworker throws up his hands in horror when you suggest that he seek professional advice.

It would be better for him were he to throw up his hands when he takes a look at his plant and then at the other side of his ledger.

It would be **BETTER** business judgment if he were to realize that **MISTAKES** made in **WRONG** construction mean **LOST** efficiency and that lost efficiency means **LOST** dollars.

If you are building a dog kennel and have no practical knowledge of carpentry or brick work, you would be ahead if you permitted someone who **DOES** know how to draw plans for that kennel.

If plans for the kennel are practical then the plans for a **CLAY PLANT** that means an investment of \$50,000 or more **IS PRACTICAL**.

Have your plant designed right at the start and save mistakes in the future. Mistakes cost money and turn what otherwise would be a money-making into a money-losing concern.



Why sit to one side and complain of the "Big fellows hogging the show?" Why not do a little "hogging" yourself? The "big" manufacturer had to make a **START** just as **YOU** did. The only difference is that he **SET** a goal ahead and kept striving to reach that goal and permitted no obstacle to keep him from reaching it.



There is nothing wasted in Nature. There is just so much energy stored up in the world. If you do not use **YOUR** share some one else uses it **FOR** you and you lose the benefit while **HE** gains it.



There is more undeveloped territory in the United States than there is developed territory. And in the same measure there is just as much undeveloped business in the industrial world. The farmer who takes up a new claim in the West and develops it does it by **ACTION**. The brickmaker who develops new business can only do it by an expenditure of energy.

A Strong Argument for Brick



The above group of illustrations, occupying nearly a third more space than here shown, was printed and distributed to clayworkers by the American Clay Machinery Co., with the notation that the pictures were taken during the recent Ohio and Indiana floods to show the superiority of brick as a safer and better building material than frame. The American company offered to supply brickmakers with any quantity of the folders with blank space for their own name free of charge, urging the clayworkers to use the pictures to boost brick.

New Methods and Processes

A DEPARTMENT OF TECHNOLOGY
WHEREIN RECENT EXPERIMENTS
AND DISCOVERIES ARE EXPLOITED

Edited by

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In a very comprehensive lecture delivered before the English Ceramic Society (Trans. E. C. S., Vol. 12, p. 36-50), Dr. W. R. Ormandy, of Manchester, England, describes some very interesting work done by himself, in the purification of clay, by an electrical process.

A statement to the effect that, with suitable treatment, a common fireclay can be so altered in its chemical analysis

out, eliminating a certain amount of impurities. But it is obvious that if these impurities be very finely subdivided and intimately inter-mixed with the clay, such treatment will not result in their total elimination. Consequently there is a decided limitation to separation by preliminary washing and subsequent filter pressing.

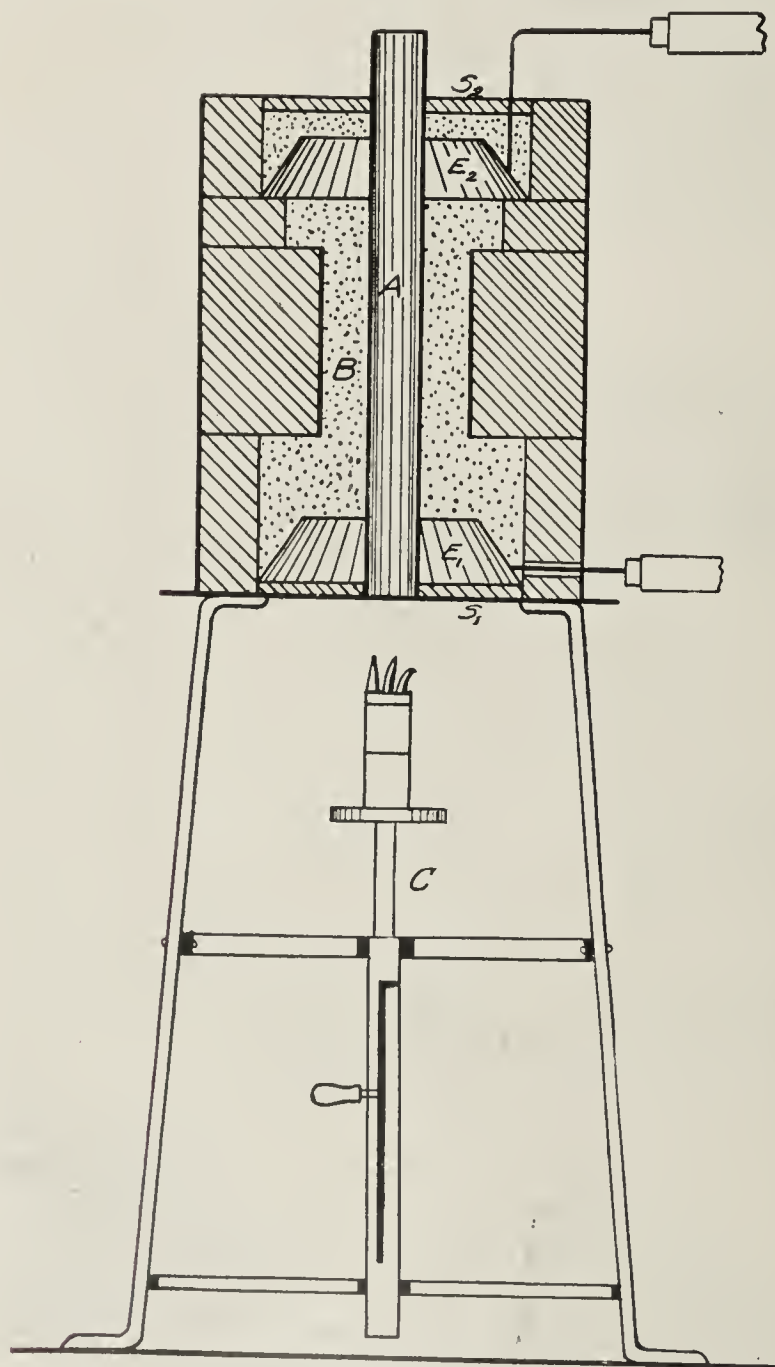
Then there is also the somewhat more modern method of cleaning clay which is employed in the separation of china clay. In this method, use is made of purification by settling tanks and mica drags, and of a filter press eventually, to hurry the process. But many readers are, no doubt, painfully aware of the limitation of the filter press in catching hold of the finished material after as much of the coarser material as possible has settled out. And furthermore, only too well known, is the difficulty experienced in the use of the filter press, if the clay is possessed of much plasticity.

The electrical process is, of course, radically different from either of the above methods. The clays are dug as usual in the ordinary way and worked into a slip with water. To this is then added a small amount of a suitable electrolyte, the kind and amount of which varies somewhat with the nature of the clay. As might be expected, this tends to cause the suspended material to settle out. To illustrate this point, Dr. Ormandy exhibited some samples of clay in solution which would not settle out, even after weeks had elapsed. Upon the addition of a small amount of the electrolyte, material immediately began to separate, forming a layer which, in a few moments, was sufficiently thick and firm to permit of the bottle being turned upside down without the clay remaining in suspension, taking the precipitate with it. Although a considerable amount of dirt has been eliminated by this process the clay which stays in suspension is so finely divided that not even the finest filter will recover it; but, of course, it must be understood that the electrolyte will not cause the removal of those impurities which are sufficiently subdivided as to stay in suspension with the clay.

After the electrolyte has been added, the clay suspension is allowed to settle. Included in the material that settles out is the mechanical or excess silica, and accordingly then, the time allowed for settling depends upon the amount of excess silica it is desired to remove. If enough time is allowed it can be removed entirely.

After allowing from one to three hours for settling, the exact time being determined by the amount of silica which it is desired to eliminate, the clay remaining in suspension is passed on to the "Osmose" machine, where, by means of a direct electric current, at from 60 to 100 volts, according to the nature of the suspension and of the clay, the impurities are collected at the negative pole, while the pure clay substance is deposited at the positive pole.

To show how the amount of excess silica is controlled by varying the time allowed for settling, the lecturer submitted



The Electric Furnace Employed.

and properties as to make it equal to a high grade ball clay, is sure to excite interest. And this has actually been accomplished in some cases.

The older methods of cleaning clay consist primarily in making it into a creamy slip by an addition of water and then allowing it to settle, whereby the coarser material settles

analyses taken on the ignited clay before and after separation. By varying the time allowed for settling from one to fourteen hours, the percentage of Al_2O_3 , in one case, for example, was raised from 40.46 to 45.75, showing that the very finely divided silica, after the addition of electrolyte, separated to a very large extent, while the "Osmose" machine separated the remainder. In consequence of the increased percentage of Al_2O_3 , the melting point was raised from cone 35 to cone 37, while the sintering temperature dropped from $1,460^\circ\text{C}$. [$2,628^\circ\text{F}$.] to $1,380^\circ\text{C}$. [$2,284^\circ\text{F}$.].

The "Osmose" machine consists essentially of a semi-circular trough in the center of which is a revolving drum made of conducting metal, and outside this, a conducting metal cylinder which serves as the positive pole. Under this, and distant about $\frac{1}{2}$ inch or so, is a wire netting forming the negative pole, and between this and the cylinder serving as the positive pole, the clay slip runs. By virtue of the electric current, the impurities collect on and under the iron netting where they are removed either by a current of water or by means of a continuous worm, and as the cylinder revolves, the clay comes off of the top of it in the form of a continuous blanket $1\frac{1}{2}$ yards wide and about $\frac{1}{4}$ inch thick.

Control Water by Voltage.

Probably one of the most remarkable things in the whole process, is the fact that the clay so collected is obtained in a form very much drier than would be the case in filter pressing a layer $\frac{1}{8}$ inch thick at two tons pressure per square inch. It is possible to control the amount of water in the finished product by simply regulating the voltage employed.

The process is especially applicable to the purification of china clay. At the present time the china clay is washed out from among the decomposed rocks, passes through long systems of troughs and the like for the removal of quartz and mica, and is then conducted into settling pits and after a time is cut up into blocks containing about one-half their weight of water, so soft that the clay cannot be dried by any of the modern economical means of drying, but is dried on beds very uneconomically from the point of fuel burned.

The new process washes the clay out of the matrix and the whole mixture passes through a mechanical quartz separator. This device (Freygang's invention) consists of a cast iron tube with a worm in it which carries the coarse particles to the top and discharges them. Half way up the tube, a pipe takes off the clay suspension with as much quartz as is fine enough to pass away at whatever velocity they care to run the material through. After the material has passed through this rough quartz separator, the electrolyte is added and the mixture then passed into one or two settling tanks. From here, it passes through the "Osmose" machine, from which it is taken in a constant stream. The whole plant can be left to run automatically day and night, the pumps being so arranged as to supply raw material as fast as it is needed. A plant of this type and capable of dealing with 150 tons of ball clay per week can be operated by two men and a boy on each shift.

The most important consideration in the whole matter is, of course, the question of cost. The cost obviously must be divided into a number of items: cost of plant, labor, current and chemicals. The cost of chemicals may be practically left out of account, because in the first place the amount added is practically infinitesimal and it is only necessary to add very little from time to time. The cost of current is the chief item. As regards this, Dr. Ormandy states that current can be supplied at 1 cent per kw. To accomplish this, a suction gas plant, generating the necessary horsepower, is in-

stalled, and inasmuch as the load is unvarying, all the current can be used. By that means he claims he can obtain current at 1 cent per kw. and in large plants at less. The cost of current for producing a ton of clay varies from $2\frac{1}{4}$ cents to $6\frac{3}{4}$ cents per ton of finished product. This depends on the physical properties of the clay not yet thoroughly understood. As a basis, it might be said that the cost of the current would be one-sixth per ton of finished product. The worst clays, however, do not require the largest amount of current. The yield, moreover, of finished product from 100 tons of clay dug from the bed, may be as much as 87%.

A plant designed to produce 40 tons of finished product daily, assuming the waste content to be 30%, would cost approximately \$25,000. This is indeed very low in comparison with the cost of an ordinary plant to recover china clay, as built today.

Another very important consideration is the amount of ground space required. An "Osmose" plant having an output of 40 tons daily occupies about one-fifth the space of the present plants using filter pressures for this work and having an output of only 15 tons daily.

As has been inferred, the cost of labor is very small, inasmuch as the process is practically automatic once it has got running on a standard material. The cost of water is also very small, inasmuch as it can be used over and over again.

This process is applicable to quite a large number of things. It has been applied for instance to the separation of strongly electro-negative silica from solutions. This silica has the property of absorbing radium and taking it away from almost anything. It is obvious furthermore that it can be used in the concentration of iron ores, and indeed a well known German firm has the process patented for its world-wide application for this purpose.

Cones Seger Made Famous

Considerable interest is being manifested just now in Seger Cones, judging from the number of inquiries "Brick and Clay Record" receives. The following description of the cones is taken from one of the Technological papers of the U. S. Bureau of Standards and is credited to Prof. A. V. Bleining, ceramic chemist:

"The Seger cones are small tetrahedra molded from various mixtures of kaolin, feldspar, calcium carbonate, quartz, and ferric oxide, designed to soften at regularly increasing temperature intervals. The melting point, so called, of these cones is accepted to be that temperature at which the apex of the cones touches the fire-clay tile upon which they are placed. These pyroscopes are largely used in the ceramic industries and offer a valuable means of controlling burning operations, since, in fact, they measure heat effect rather than temperature, which includes the factor of time.

"The cones have never been claimed by their originator, Dr. H. A. Seger, to measure temperatures; in fact, he strenuously opposed any such application of his device. As a matter of fact, the cones indicate temperatures with a fair degree of accuracy, considering their nature, under the same conditions of firing, though it is well understood that upon longer heating the softening point indicated is lower than upon quick heating."

"Seger cones are generally used in testing fire clays or refractory products for heat resistance. The common practice is to place the specimen to be tested into a furnace together with a number of the standard cones, the temperature being carried to the collapsing point of the sample.

After cooling the cones are inspected and the highest number which has softened and bent is considered to correspond to the 'melting' point of the specimen under test.

"The Deville coke-fired furnace is commonly employed for this work, but the more recent electrical carbon-resistance furnaces, in which the specimens are placed within highly refractory muffles, are to be preferred. These furnaces permit of the direct observation of the cones and the tem-

the higher Seger cones, expressed in molecular equivalents, together with the softening temperatures given by the makers, those determined by Hoffmann, and the values as corrected by Kanolt. The softening temperatures given in the table correspond to rapid heating:

Cone	Formula of silicate mixture	Softening temperature °C			
		Given by the makers	According to Hoffmann	Corrected for new scale Kanolt	From corrected and smoothed curve, Kanolt
26	$\left\{ \begin{array}{l} 0.3 \text{K}_2\text{O} \\ 0.7 \text{CaO} \end{array} \right\} \left\{ \begin{array}{l} 7.2 \text{Al}_2\text{O}_3 \\ 72 \text{SiO}_2 \end{array} \right\} \dots$	1580	1580	1600	1600
27	$\left\{ \begin{array}{l} 0.3 \text{K}_2\text{O} \\ 0.7 \text{CaO} \end{array} \right\} \left\{ \begin{array}{l} 20.0 \text{Al}_2\text{O}_3 \\ 200 \text{SiO}_2 \end{array} \right\} \dots$	1610	1605	1630	1620
28	$\text{Al}_2\text{O}_3 \ 10 \ \text{SiO}_2 \dots\dots\dots$	1630	1610	1635	1635
29	$\text{Al}_2\text{O}_3 \ 8 \ \text{SiO}_2 \dots\dots\dots$	1650	1625	1650	1650
30	$\text{Al}_2\text{O}_3 \ 6 \ \text{SiO}_2 \dots\dots\dots$	1670	1640	1670	1670
31	$\text{Al}_2\text{O}_3 \ 5 \ \text{SiO}_2 \dots\dots\dots$	1690	1640	1670	1685
32	$\text{Al}_2\text{O}_3 \ 4 \ \text{SiO}_2 \dots\dots\dots$	1710	1670	1705	1705
33	$\text{Al}_2\text{O}_3 \ 3 \ \text{SiO}_2 \dots\dots\dots$	1730	1680	1720	1720
34	$\text{Al}_2\text{O}_3 \ 2.5 \ \text{SiO}_2 \dots\dots\dots$	1750	1700	1740	1740
35	$\text{Al}_2\text{O}_3 \ 2 \ \text{SiO}_2 \dots\dots\dots$	1770	1710	1755	1755
36	$\text{Al}_2\text{O}_3 \ 2 \ \text{SiO}_2^6 \dots\dots\dots$	1790	....	....	....

⁵ Zettlitz kaolin.

⁶ Refractory shale, Rackonitz.

Temperatures below cone 26 are not considered, since any clay softening below this point is not regarded as a refractory material.

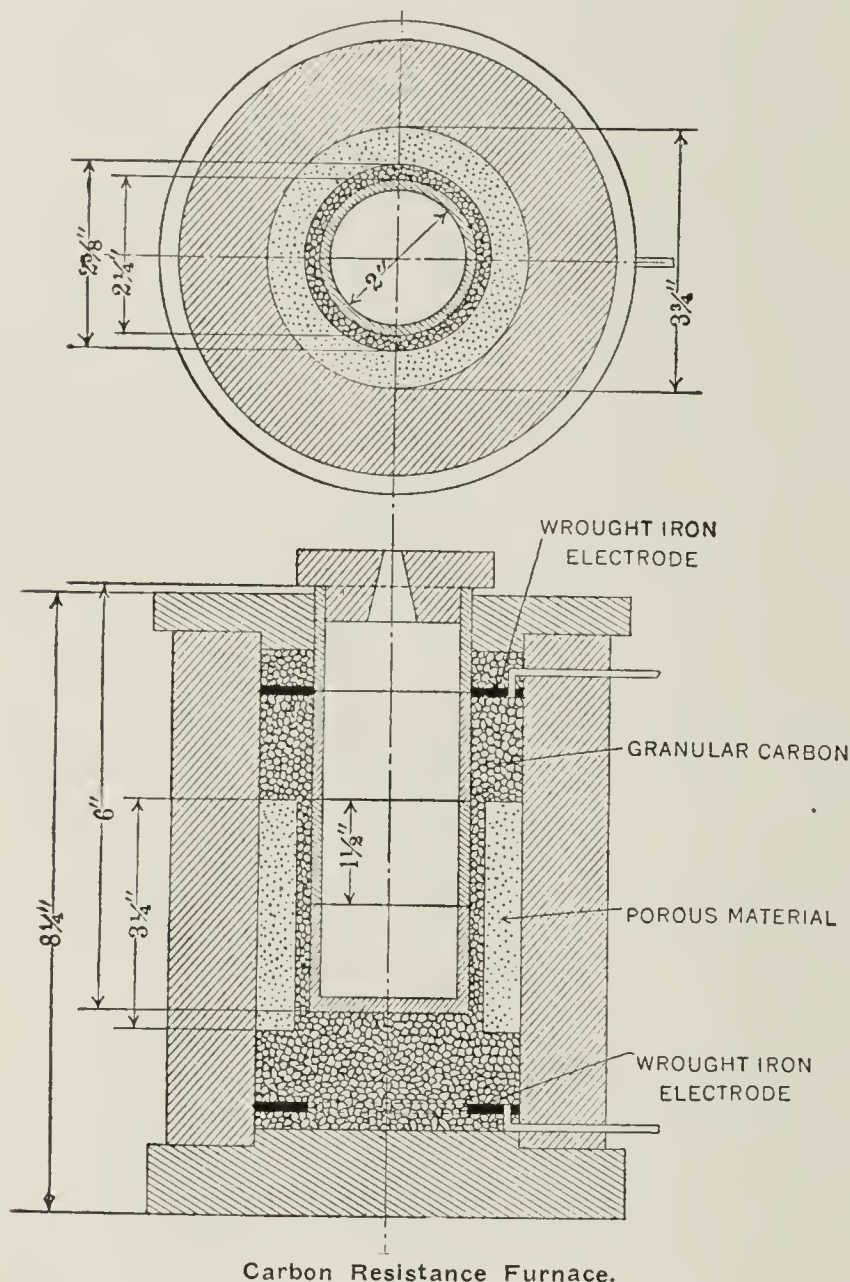
Artificial Coloring of Clay

By J. Keele and W. S. Bishop

The common brick clay used in the greater part of South-western Ontario is a stratified surface clay. The upper one to three feet of this clay burns to a red color; the lower portions burn buff. The brickmakers call it "gray" or "white." The bottom clay burns to a buff color for the reason that it contains a far higher percentage of lime than it does of iron. This excess of lime exercises a bleaching action on the iron during the burning process, so that it prevents the latter from giving the red coloration, which the burned product would otherwise have. The greater part of the lime has been leached from the upper portion of the clay by weathering action, so that there is a larger percentage of iron than lime in the weathered clay and it produces a red brick.

This thin layer of weathered clay has been exhausted at several brick plants, and some manufacturers who have run out of the red burning clay are looking for some substance, which, when mixed with their buff burning clay, will produce a red brick.

The following tests were undertaken to find out if it were



Carbon Resistance Furnace.

perature may be determined by means of the Morse, the Holborn-Kurlbaum, or a similar optical pyrometer.

"The diagram accompanying this article shows a furnace in the clay-products section of the Bureau of Standards.

"For the purpose of comparing the softening temperatures of fire-clay specimens with those of the standard cones the numbers 26-36 are employed, while for special refractories, such as bauxite brick, etc., the numbers 37-42 are used. The softening temperatures of the Seger cones have been determined in the Reichsanstalt by Hoffmann based upon the Holborn and Day temperature scale, the temperatures above 1,150° C. having been obtained by extra-polation from the emf-temperature equation of the platinum, platinum-rhodium thermocouple. On this scale the melting point of palladium is 1,535° and that of platinum 1,710° C. The values thus obtained should no doubt be corrected to correspond with the more recent determinations of the melting points of palladium and platinum, which are 1,549° and 1,755° C., respectively. Since, after making this correction, some small irregularity occurs in the curve connecting temperature and cone number, Dr. C. W. Kanolt has suggested that a smooth curve be drawn through the points, a procedure which seems to be justified."

In the following table are compiled the compositions of



Showing How the Cones Act Under Heat.

possible to accomplish this result by using small quantities of certain materials which contain large percentages of iron oxide and which are easily obtained in quantity. The materials of this character used in the experiments are sold under the trade names of Venetian red, maroon oxide and crocus martis. The Venetian red and maroon oxide are the common reddish-brown colors, so largely used in house painting. The crocus martis is used principally by potters and enameled brick manufacturers. It is the ingredient which is mixed with glazes or enamels to produce brown and yellow colors. It is also used extensively as a metal polish. Manufacturers of sand lime and cement brick sometimes use maroon oxide to give a reddish color to their wares. As brick of this class are not burned, the red stain added to them in the mixing machine remains intact.

The clay sample was taken from James Lochrie's brickyard on Weston Road near Toronto. Its chemical analysis is as follows:

Silica	47.20 per cent	Lime	17.30 per cent
Alumina	14.04 per cent	Magnesia	3.10 per cent
Iron oxide	3.25 per cent		

The analysis is fairly representative for the buff burning surface clays in Ontario. Analysis made to determine the iron and lime contents in the coloring material gave the following percentages:

	Iron Oxide	Lime		Iron Oxide	Lime
Venetian red	50.2	12.4	Crocus martis	89.0	1.7
Maroon oxide	60.7	6.0			

The Venetian red can be had for \$1 per 100 lbs. and the maroon oxide for \$1.50 per 100, when bought in large quantities. The crocus martis is quoted in an English catalog at \$2.50 per cwt. It requires about three tons of clay to make 1,000 brick, so that the cost per 1,000 of adding 4 per cent of maroon oxide, or 2 per cent of crocus martis, would amount to about \$3.60.

Make Good Coloring Agents.

When the quantity of lime in a clay is three times that of the iron oxide, a buff or cream color results in the burned product. Referring to the analysis of the clay from Lochrie's yard, there is about 7.5 per cent of lime in excess of the amount which would mask the color produced by the iron. The coloring materials all contain more or less impurities; but, the richer they are in iron oxide, the more expensive they are, and the better coloring agents. For example, if 4 per cent of Venetian red was taken, we should not get 4 per cent of iron oxide, but only about 2 per cent. If 4 per cent of crocus martis was used we should get an equivalent of about $3\frac{1}{2}$ per cent of iron oxide.

Without going any further into the subject, it readily can be seen that the production of a red color in a high-lime, buff-burning clay by means of iron oxide is not a commercial proposition.

For the burning tests, small brick of clay containing 2, 3 and 4 per cent of Venetian red and maroon oxide were made up as well as some containing 1 and 2 per cent of crocus martis. Brick were also made which contained none of the coloring ingredient and burned with the others for the purpose of comparison. The test pieces were burned in a muffle kiln, fired with oil, the maximum temperature reached being 2,000° F.

On drawing these samples, after the kiln was cooled down, it was found that the color of the burned clay had not changed. In fact, the brick which contained the coloring matter could not be distinguished from those which had none, except that there was a slight pink bloom on one side of the brick containing 4 per cent of maroon oxide.

The red color of the added iron oxide was all absorbed by the lime in the clay and it was evident from the results

that much larger quantities of the iron oxides would have to be used in order to produce anything like a saleable red color.

POTTERS GAIN IMPORTANT TARIFF POINT.

Secure Appointment of Special Commissioner Before United States Senate Considers Bill Passed

An investigation of wages and conditions in the pottery industry has been ordered by the Department of Commerce, because of threatened reductions in the wage scale, which certain potters claimed would be necessary if the tariff bill were not amended before passing the Senate. This bill, in its original form, so far as clay products are concerned, passed the House of Representatives on May 8, after a determined, but vain, effort had been made to secure concessions that were claimed to be vital to the welfare of the pottery trade in particular.

So insistent were these representations that this industry, more, possibly, than any other, put the greater part of the protective tariff into the pay envelopes of the men and women employed, that Secretary Redfield determined to get at the real facts, not only in this country, but in England, Germany and France. If a decrease in wages follows the passage of the tariff bill in its present form, the department will have statistics to present to Congress, based on an unbiased investigation.

The secretary, in a letter to A. H. Baldwin, chief of the division of foreign and domestic commerce, Department of Commerce, under whose supervision the investigation will be made, says that in addition to the owners and operatives there is "a third and greater party interested, and that is the people who buy the products." They, he asserts, are entitled to know whether the industry is conducted on efficient lines or whether it suffers from inertia. He concludes by saying "No argument can lie in favor of any form of taxation on goods that compete with our potteries until it is known and shown that our potters are doing the utmost best that is known to their art."

Pottery manufacturers express themselves as being pleased with this attitude and action, claiming that every statement made by them, relative to trade conditions, was based on hard, cold facts, and that this official "quiz" will be of great value to them, in that it will substantiate the statements they will make before the Senate committees and convince the party leaders that, if a big strike or lockout follows the passage of the bill in its present form, the Democratic party, as represented in the Senate and House, will be responsible, rather than the employers of labor.

Shale and Fire Clay.

Clays are ultimately derived from the decay of older rocks, says Bulletin 522, United States Geological Survey, the finer particles being carried off by streams and deposited along channels, in lakes, or along parts of the seacoast or sea bottom. In chemical composition the clays are made up essentially of silica and alumina, though nearly all contain more or less iron oxide and many contain lime, magnesia, alkali, and sulphur, but usually in small percentages.

Throw Out That Pug Mill

It has served its usefulness. You need a larger one. Sell the old one by inserting an ad in the Classified pages, and buy a larger mill.

Questions and Answers

A DEPARTMENT FOR THE SOLUTION OF THE KNOTTY PROBLEMS CON- FRONTING THE CLAY WORKER

This department was inaugurated to be of material benefit to the readers of "Brick and Clay Record" and no charge is made for the service given. The advice of the world's recognized authorities in ceramics is offered to clayworkers who are invited to avail themselves of the opportunity to have their problems solved here. Should a reply be desired by letter enclose a stamped and addressed envelope for reply.

100. *Indiana—We note in your "Questions and Answers" department for April 15 the following by 67 Havana: "What can I add to a white clay in order to obtain a red brick?" You reply that the clay may be burnt red by adding oxide of iron. Can you give us some successful method of adding this to the clay?*

(The above question was referred to Ellis Lovejoy, who replied as below.—EDITOR.)

In reply to your inquiry relative to obtaining a red color from a buff burning clay, your answer "67 Havana" to the question is in the main correct, except the last statement in the first paragraph. This last statement, "Clays containing little alumina and much iron burn red," is true enough, but it also may be said that clays containing much alumina and much iron burn red.

It is the "much iron" that counts and the content of alumina has very little to do with it. We have found that a highly aluminous clay containing iron, of course, will burn a dull brown red while a silicious clay will have a bright red color, but both are red.

Your correspondent says, "the effectiveness of iron as a coloring agent depends not only upon the quantity used but also upon the degree of oxidation and upon the physical and chemical condition of the clay," to which we agree, but we would also add that the physical condition of the iron is an important factor. A clay containing five per cent of iron oxide will burn red provided it is not affected by the "chemical condition" of the clay. This assumes that the iron is in a finely divided state and is distributed through the clay.

Suppose that we have a buff burning clay free from lime and containing very little iron. Now let us add to it a lump of iron ore equal to five per cent, or a few nails equal to five per cent iron oxide. The clay will not burn red in consequence.

We may divide the iron into a dozen, a hundred, a thousand pieces and still get very little red color from it. It is the infinitesimal division we get in nature that gives us the effective red color of naturally red burning clays. We cannot get this fine division mechanically.

The usual material added to clays to get a red color is finely divided hematite ore, or better the extremely finely divided mineral paint made by roasting ferrous sulphate.

We have often considered the possibility of coloring buff burning clays chemically and thus duplicating nature's work. If we could add a solution of iron to a clay and then evaporate it, or decompose it, as the case may be, we would have each grain of the clay coated with iron in a finely divided state—an iron stain we may say, we would produce a red burning material.

Iron ores—the oxides and carbonate, are not soluble and consequently cannot be added in solution. We can only add them as mixtures and when we add enough of the oxide, let us say, we will get a dark brown red color simply because the color effect of the iron predominates and hides the buff color of the clay.

We add manganese to a buff burning clay to produce a gray color, but it is simply a pepper and salt gray and will approach a solid color with increasing degree of fineness of the manganese. Similarly with the oxide of iron.

We can make a light burning sand red by soaking it in a solution of ferrous sulphate then drying it in the sand dryer such as is used in soft mud brick yards where the brick are sand molded. Perhaps one soaking and drying may be sufficient, but if not we may get the color to any desired depth by repeating the process. We consider this a much better method of improving the color of sand molded brick than by the common method of adding powdered iron ore.

Now the question arises, can we do the same with clay and thereby color the entire body of the brick?

We do not know. The cheapest iron compound that is soluble is copperas—ferrous sulphate. This salt contains 20% iron, or 26% ferrous oxide, or 29% ferric oxide, assuming that all the oxygen comes from the salt. Our basis of figuring should probably be on the basis of 26% ferrous oxide subsequently oxidized to the red oxide in the burning.

If one thousand brick requires 6,000 pounds of clay there should be added to it at least (5%) 300 pounds of ferric oxide, or in round numbers, 1,000 pounds of ferrous sulphate in solution.

To one familiar with the behavior of sulphur compounds the objection will be raised that in case the clay contains any lime, the sulphur element in the ferrous sulphate will combine with lime and excessive scumming will result. This will undoubtedly be the case and while we will produce a red color we at the same time bury it under a dirty white scum.

Naturally the next step would be to add barium carbonate or barium hydrate to precipitate the sulphur and in so doing we would at the same time precipitate ferric carbonate or ferric hydrate since either are practically insoluble. However, we would accomplish results since the iron would be distributed through the clay in a perfect manner and every grain of clay would be coated with a film of the precipitate, or even if coagulation took place every pore in the clay mass would be more or less filled with the iron precipitate.

If the clay did not contain lime, probably the sulphur element from the decomposition of the ferrous sulphate would pass off without any scumming difficulty and in such a case we believe there may be possibilities in treating a red clay chemically to produce a red colored brick.

If, however, scumming results, the double chemical treatment, and the uncertainty of introducing proper quantities and getting complete reactions, makes the process a very questionable commercial one.

If the clay is high in lime, we have the well known combination of iron and lime to form a lime iron silicate, with the result that the color is a buff, greenish buff, to a green regardless of the content of iron. In such a case, therefore, it would be useless to try to get a red burning product.

Since sulphur causes scumming, it might be asked if there is not some other soluble salt of iron which could be used. We have chlorides, oxalates, and nitrates of iron in both the "ic" and "ous" forms that are soluble, and also the bromide, but the cost of such chemicals would be prohibitive, and their effect need not be discussed.

In conclusion we have not much confidence in the chemical treatment of a buff-burning clay to produce a red color, but we believe that a bright red burning sand for sand-molded soft mud brick can be produced in this way and with much more satisfactory results than the present method of adding powdered iron ore. The addition of iron ore, or better the mineral pigment, is the most practical method of getting a red color into a mass of buff-burning clay, or, as suggested by your former correspondent, by the addition of red-burning clay or sand to the buff-burning material.

Chemical Analysis Vs. Commercial Value.

101. *Texas—I have a large quantity of clay, light in color and weight. It is entirely free from grit and is very fine. It analyzed as follows:*

Silica	53.15
Alumina	16.14
Iron	5.70
Lime	7.56
Magnesia	2.40
Sulphuric anhydride	trace
Potassium oxide	1.97
Sodium oxide	1.91
Loss in ignition.....	11.60

The analysis was run in duplicate and the above figures are the average values. Will you kindly tell me what this clay might be used for most advantageously? I want to know what kind of clay ware or brick could be made from this clay.

It very often occurs that a chemical analysis of clay gives very little information as to its commercial qualities, particularly of a common clay.

The clay is said to contain no grit, yet we can only account for about 19 per cent of the silica in combination with the alumina and there remains about 33 per cent to be accounted for in some way and the probabilities are that it is in the form of free silica, but must be very fine grained if the clay is not gritty.

Since there is no apparent grit and since no pebbles of any kind are reported we assume that the lime is present as a chemical constituent rather than as pebbles, which is a very important matter.

A few lime pebbles might be serious while the same amount or even a greater amount of lime distributed through the clay might not be so serious.

We can draw no conclusions in regard to the working behavior of the material,—it may form a perfect bar of clay in every respect, or it may rank among the most seriously laminating clays and be impractical for any ware on this account.

The content of iron is sufficient for a red color, but the content of lime is sufficient to have some influence upon the iron and the burned color may be a pale red to a buff. It can hardly burn to a deep red on account of the lime nor do we believe there is sufficient lime to completely mantle the iron. We would expect the color to be a pale red.

The content of fluxes is high,—iron, lime, magnesia and alkalies,—and in consequence the clay should not require a high heat to burn.

The quantity of lime present makes it very questionable whether it would be possible to get any kind of vitrified ware from the clay.

Lime is also troublesome in that as a flux it behaves irregularly and limey clays, as a rule, have very short burning ranges. Sometimes the burning range is so short that it is not possible to burn the ware commercially. Before the ware gets hard in the cooler parts of the kiln it fuses and loses its shape in the hotter parts. This is an extremely short burning range and all limey clays are not so bad, but the presence of lime in any quantity makes it pretty certain that the burning range will be affected in some degree.

The most important factors in the commercial value of a clay cannot be determined from a chemical analysis, and we wonder why so many people have them made.

The important factors are whether the clay has good working properties, whether ware made from it will dry safely and how safely, and what is the actual safe burning range. In addition to this we wish to know whether the ware is dense or porous, whether it scums, or develops any efflorescence. A practical test will determine this and it is the only way to determine them.

In conclusion we would say, so far as we can draw any conclusions from the analysis,—that the clay being apparently gritless will develop lamination troubles in a stiff-mud machine, provided the clay is plastic—which does not follow from the analysis.

We doubt if any vitrified ware is practical from it.

The color will probably be a pale red and not a good face brick color.

Being fine grained, and if it is plastic, the chances are that it will give trouble in drying.

There is hardly sufficient lime to make the burning range too short for commercial operations on common wares.

If our conclusions are correct then the clay will be limited to common brick, to drain tile, and to fire proofing and hollow blocks, perhaps a cheap grade of face brick depending upon the requirement of the market and the local supply.

These commoner wares will depend upon the working behavior and upon the drying qualities of the clay of which we have no hint.

Finally any one drawing conclusions from such insufficient evidence is either a fool or a knave.

We hope we are neither, but we have attempted to draw conclusions without sufficient warrant and thus render ourselves liable. We wish to say that we have drawn our conclusions from similar clays which follow the rule, but there are as many clays that follow the exception as there are that follow the rule.

Clays are full of more surprises than any other material we know.

Information Wanted.

110.—A manufacturer's agent in Texas wants to put in a line of enameled brick and also get in touch with a manufacturer who makes an iron clay brick in a brown shade, glazed and hard-burned, and which can be sold at from \$14 to \$18 delivered in carload lots.

107.—A subscriber wants to know the name of the manufacturer of "Keasbie" brick. Can some of our readers supply the information?

108.—An Illinois reader wants to know the address of No. 63 California in our March 1 Question and Answer Department, as he wishes to correspond with him, and we have mislaid the original letter. Will California No. 63 please supply the missing information?

109.—Two correspondents seek the name and address of the Canadian promoter mentioned in the editorial on page 167, February 1, 1913, issue of this journal. We have had several inquiries of this same nature and it may be well to mention

that at the time the editorial was written the promoter had secured some one to make the necessary investment and that the plant has, we understand, been making brick for some time.

111.—A Maryland brickmaker, in reference to "52 Syracuse" who asked about a machine that would make "Hot Top" brick, writes: "I have had considerable experience on this line of goods, on bottom and top pours, and also on punching and self-lifter. If the parties will send me a drawing of the brick they want I may be able to give them the benefit of my experience on sleeve nozzle runner and top brick for ingot moulds. I ran two machines for 12 or 14 years on this class of goods."

Please Page G. Ryland Newland.

106. *Illinois*—Can you give me the present address of G. Ryland Newland, expert clay analyst and chemist, who recently announced a process for weather-proof, water-proof red and black end brick?

Will any reader who happens to know, send word to this office or communicate our request to Mr. Newland?

Adding Slag Not Practical.

116. *Indiana*—We noticed in an issue of "Brick and Clay Record" sometime ago (February 1, 1913—Page 175) an article that said clay that would not vitrify could be made to vitrify by the addition of slag. We would like to know something further about this.

The item referred to was reprinted from a foreign journal and published at its face value. It is possible to get a vitreous body by mixing clays, feldspars, flint, and fluxes. All pottery bodies are made in this way.

We do not believe, however, that one could take any clay and mix with it any blast furnace slag, or any slag, and get a vitrified product from the mixture. Clays and slags vary widely and there would be one chance in a thousand of hitting a proper mixture to give a vitrified product.

Some clays that are lacking in fluxes might be improved in hardness by the addition of powdered slag, but it would be far from vitrification. A blast furnace slag will contain roughly 30 per cent silica, 15 per cent alumina, 50 per cent lime, together with some magnesia, alkalis, etc. The silica alumina ration is not unlike that in many common clays.

Suppose that we should add 20 per cent of such slag to a clay, we would thereby be adding 10 per cent of lime. Now, the behavior of lime as a flux in clays is well known, and those having limey clays to deal with do not feel very kindly towards the lime element in their clays. We do not know of any clays containing 10 per cent or more of lime that are being used for sewer pipe, paving bricks, and similar ware, and we doubt if it would be practical to make such vitrified wares from a clay containing 10 per cent of lime. Limey clays will not stand up under the soaking heat required for vitrified wares nor will they, as they approach vitrification, support the weight they must carry in a commercial kiln. Potters use lime in their mixtures but each piece of ware supports its own weight only and is not nested with similar pieces to a height of ten or more feet. Stone ware clays, so far as we know, are all low in lime content.

We are inclined to think that the addition of a rock, or perhaps a slag, running high in magnesia would be more likely to produce desired results than the use of a slag or rock high in lime.

Magnesia, as a fluxing material, has been recommended to toughen paving brick mixtures, and its behavior in fusion is very unsatisfactory. Serpentine and talc are common rocks which run high in magnesia and in some localities can be had at a low cost.

There are some furnaces in which a dolomitic limestone is used for flux and the slags from such furnaces would predominate and we believe would do more harm than good.

Wants Kaolin.

104. *Alabama*—Please give me what information you can in regard to kaolin, especially giving an analysis of the kind that is found in this country. Would also be pleased to have the names of parties who handle this clay, and whose plants are near Birmingham, Ala.

We published a reply to a question similar to the first in our issue of May 1. Regarding the second, would be glad to have the names and addresses of plants, pottery or brick, using kaolin, or parties selling kaolin, whose factories are reasonably near Birmingham.

Wants Idle High Heat Kilns.

114. *New York*—Having been a reader of "Brick and Clay Record" for several years I feel confident in your ability to advise me of any idle or burned out plants having four or more down-draft kilns of about 18 ft. diameter. Any stoneware, pottery or other high heat kilns would be of interest, if for sale at a reasonable price.

If any reader knows of such properties, we will appreciate the information and will put the owner in touch with this would-be purchaser.

Counters on Brick Machines.

117. *New Jersey*—Give us the names of some concerns that manufacture counting machines that can be attached to brick machines.

We know of no such machine. Recently W. E. Dunwody, of the Standard Brick Co., of Macon, Ga., in a letter published in this journal, bemoaned the fact that no counter was available for this purpose, and pointed out the value of knowing just how many brick were turned out by a machine. We understand since that time Mr. Dunwody has been working on an instrument of his invention.

Another Seger Cone Inquiry.

118. *Illinois*—Will you advise us as to the name and location of a concern that handles the genuine Seger cones made in Germany?

We know of no one in the United States who handles the German cones. Perhaps some of our readers can enlighten our Illinois friend.

Seeks Concrete Information.

113. *Mississippi*—Can you give me some information on cement tile and failures? You formerly advertised a "Clay-workers' library." Is it still for sale?

A sample copy of "The Life of Portland Cement" has been sent the correspondent. "Recent Concrete Failures," soon to be issued by this journal, will be sent as soon as off the press, which will be several weeks. The "Clay Workers' Library" mentioned is listed in every issue of "Brick and Clay Record."

The Jackson Loader.

Thanks to J. B. Casey, treasurer of the W. J. Lee Drain Tile Co., Colfax, Ind., "Ohio's" query in the May 1st issue about the Jackson Loader is answered. "Ohio" wanted to know the name of the manufacturer. Mr. Casey refers him to the George W. Jackson Mfg. Co., 754 Jackson Boulevard, Chicago. What is that old saw about "A Prophet is Not Without Honor, etc.?"

In the Paving Block Field

NEWS OF THE INDUSTRY AND SHORT HINTS AND SUGGESTIONS FOR THE MANUFACTURER

At a meeting at Grand Rapids, Mich., recently, at which fourteen counties were represented, definite action was taken toward the building of the proposed boulevard highway through Michigan to form the connecting link of the Chicago-Grand Rapids-Straits of the Mackinaw automobile road.

The route adopted enters Michigan on the highway from South Bend, Ind., to Niles, Mich., and passes through several cities, including Kalamazoo, Grand Rapids, Big Rapids, Transverse City, Charlevoix and Petoskey.

The president of the association which is named the Chicago-Grand Rapids-Mackinaw Boulevard Association, is Dr. F. C. Warnshuis, and the secretary is M. C. Huggett, both of Grand Rapids.

A bill is pending in the Indiana Legislature to permit resident property owners to designate the brand of paving material that shall be used in street paving. At present the law permits the property owners to designate the kind but not the brand of paving material that shall be used.

During the past year, 6,726 miles of paving have been laid in the city of Davenport, Ia. Of the total, 3.15 miles are of concrete, 2.26 miles of brick, 1.076 miles of asphalt, and .24 mile of macadam.

Dennison, Texas is planning to pave a number of streets during the coming season, about three miles in all. Appreciating the wearing qualities of brick pavement the city commission has selected brick for the surfacing of streets in the downtown districts; asphalt to be used in residence districts.

Much argument against the further use of creosoted wooden block pavements in Lexington, Ky., has been made before the Board of Public Works in that city and Central Kentucky paving brick men are elated with the evident defect exhibited in the new competitive surfacing. It is the contention of many wagon and carriage drivers and chauffeurs that the blocks of wooden paving which have been laid in Lexington thus far are very dangerous when rain-soaked in the least degree, causing the wheels to slip and slide over them in a highly dangerous fashion. It has been asked that the wooden highway be tabooed in favor of the old reliable vitrified brick street hereafter in Lexington.

George Myers, superintendent of a brick manufacturing plant at Mifflinville, Pa., while on a business trip to Danville, Pa., a few weeks ago, made a statement that excellent deposits of shale for paving brick manufacture are to be found in the vicinity of Danville. Mr. Myers was formerly an official of the Coryell Construction Co., of Williamsport, Pa. As a result of his investigations, it is possible that a new company will be formed at Danville to develop these shale deposits.

For the sake of convenience the title of the American Association for Highway Improvement, which is launching upon its third successful year, was changed at the annual meeting to the American Highway Association as it will be henceforth known. Logan Waller Page, direc-

tor of the United States Office of Public Roads, was re-elected president of the association, while W. W. Finley, president of the Southern Railway Co., was elected vice-president in place of W. C. Brown, president of the New York Central Lines. J. E. Pennybacker, Jr., was re-elected secretary, while Charles P. Light was re-elected organizer and field secretary. Lee McClung, treasurer of the United States, continues as treasurer of the American Highway Association.

Newly elected directors of the association are James H. MacDonald, state highway commissioner of Connecticut; George W. Cooley, state highway engineer of Minnesota; A. G. Batchelder, chairman executive committee of the American Automobile Association; C. A. Kenyon, president of the Indiana Good Roads Association; and Dr. Joseph Hyde Pratt, state geologist of North Carolina.

Repairing and Repaving Defined.

People ex. rel. Keller et al v. City of Buffalo.—Where a street has been paved for a part of its width, subsequent pavement of those parts which have never been paved is not a "repavement," as affecting liability for the expense of an improvement. "Repairing" a pavement means restoration of the paved surface, while "repaving" means replacement of old pavement with new. A street paving assessment properly includes items of cost for removing lamp posts and hydrants. A meritorious local improvement assessment should not be set aside on account of any improper inclusion of relatively small items of cost.—New York Supreme Court, 137 N. Y. S., 464.

The Flanging of Paving Brick.

The flanging of paving block is being discussed by the paving cutters' union, the question being whether the union shall cut them or whether nonunion men shall be allowed to do the work. The cutters' union thinks that the work should be done entirely by the members of the union and thinks it would be a fatal error for the members to let go of this work. This class of work cuts quite a figure in the laying of paving block and if the union decided to confine the work to its members, it might cause considerable trouble and delay in the laying of paving brick.

A contract has been let for paving approximately two miles of streets at Warsaw, Ind., with brick during the coming season. The contract price is approximately \$45,000.

Must Have Solid Base.

It is becoming widely recognized that without a concrete base no pavement surface however good can show long life or give maximum service. The National Paving Brick Manufacturers' Association strongly recommends a monolithic concrete foundation. One paving brick manufacturer in Pennsylvania refuses to sell paving brick where concrete is not called for in the specifications.

Permanence in road construction can only be secured by consistent construction throughout. It is a sheer waste to save in initial expense at the expense of frequent repairs and shortened life.

Face Brick

W. D. Richardson, president of the Ohio Face Brick Manufacturers' Association, in a letter commenting on the article on express labels in the May 1st issue of "Brick and Clay Record," says:

There will be a meeting of the Ohio Face Brick Manufacturers' Association the latter part of this month, probably on the 22d or 23d, and I will then bring up the matter of your article. It seems to me, however, that it would merely be sufficient to bring the matter to the attention of the members of our association, so that each individual can act in the matter independently by having the labels that he places upon his sample express packages printed as he may see fit. It is not likely that all would use a uniform size label. Moreover, most, if not all, of the face brick manufacturers of Ohio who carried through this fight for lower rates to a successful issue are alive to the fact that they are entitled to and are getting the reduced rates. Most of the factories are in small towns where there are only a few express offices and the agents understand the special rates on sample brick.

The point is, Mr. Richardson, that the express agents in the small towns do not understand the special rate, and as these men are changed from time to time, their successors are prone to call everything "merchandise." We still believe that a special, uniform label should be printed and distributed by the association—a label that will be of some color other than that prescribed by the Interstate Commerce Commission to be affixed to "Prepaid" and "Collect" parcels. We suggest a form somewhat as follows:

**THIS SHIPMENT TAKES THE
SPECIAL RATE ON
SAMPLE BRICK**

Ordered by the Interstate Commerce Commission

191

**Issued by the Ohio Face Brick Manufacturers
Association**

A label of this kind would make it necessary for the local express agent to consult his tariff sheets and general orders, to the end that your members would receive the full benefit of the splendid fight made by your officers two years ago. At the same time it would be a splendid advertisement for the association and, through it, for all other organizations of clay manufacturers.

It is unfortunate no stenographer was present at the meetings of the American Face Brick Association, that were held in Chicago during the recent N. B. M. A. convention. While the papers read were of great merit, the impromptu discussion and speeches—notably one on the shortcomings of the manufacturer from a dealer's standpoint—would have been interesting and valuable to those who were unable to attend the meetings. So much has been said on this subject and so much regret expressed that no record was made of the speech and the discussion which followed, that "Brick and Clay Record" asked L. D. Binyon, of the S. S. Kimbell

Brick Co., to write an article on the needless causes of friction between the manufacturer and his various sales agencies. This will appear in an early issue.

William Hoagland, of the Claycraft Brick Co., of Columbus, O., has completed the formation of the Claycraft Mining and Brick Co., with a capital stock of \$150,000. The company will be large producers of face brick, tile, fire proofing and terra cotta. The incorporators of the new company are, besides Mr. Hoagland, John W. and Elvord Kaufman, William A. Miller and Fred A. Miller. Main offices will be maintained in Columbus.

The Scranton (N. D.) Brick Co., formerly owned by Simms & Co., has been reorganized and capitalized at \$100,000. The new company will increase the manufacturing facilities and make the highest grade fancy brick.

The Keystone Clay Products Co., of Greensburg, Pa., recently filled an order for 600,000 face brick for the Hupp Automobile Co., of Detroit.

The Kittanning Brick & Fire Clay Co., of Pittsburgh, was recently awarded the contract for furnishing over 250,000 face brick for the new high school building which is to be erected at East Liverpool, O., at a cost of over \$125,000.

The Whippany (N. J.) Brick Co. has taken over the old Philadelphia and New York Face Brick Co.'s plant at that place, which plant has been completely overhauled and re-modeled.

Chicago Items.

H. H. Kimbell has a new office in the Chamber of Commerce, where he represents the Marion Brick Works, of Montezuma, Ind. The Chicago sales for this company are handled by the Jenkins & Reynolds Co., Mr. Kimball covering northern Indiana and southern Michigan only.

Rogers M. Combs, vice-president and sales manager of the Thomas Moulding Brick Co., left last week for a short vacation. He will be found at West Baden, Ind., and says that any one who mentions brick to him until he comes back will be promptly immersed in "Spring No. 7."

Martin Kimbell, of the S. S. Kimbell Brick Co., reports the sale of over 100,000 "Lizarb" rough face brick on a new court apartment at Main street and Ridge avenue, Evanston. Thomas McCall is owner and architect.

Fred White, of the Jenkins & Reynolds Co., says that business is good and prices satisfactory. Orders booked so far this year are mostly on medium-sized operations.

Bonner & Marshall Co. is making extensive alterations in its show room, featuring the new Everhard "Dubltex" brick and Crawfordsville "Orientals."

Money is still tight and speculators are having difficulty with their loans. A normal amount of building is under way and planned, but actual operation does not follow promptly on the letting of contracts and orders for material are delayed accordingly. Prices, so far as face brick is concerned, have not improved.

WANT A SUPERINTENDENT FOR YOUR PLANT?

Insert an ad in the Classified Columns.
All good men read the classified ads in
"Brick and Clay Record."

Common Brick

Some idea of the profits in brickmaking, as the craft is followed in Canada, can be obtained from the profit and loss statement of the National Brick Co., of Laprairie, Quebec. At its first annual meeting, which was held in Montreal during April, \$255,195.00 net profits were carried forward from the year's operation, after providing bond interest. This sum was reduced by the $1\frac{1}{4}$ per cent dividend declared to shareholders out of the earnings for the year.

The statement shows:

Gross earnings	\$396,732
Less adm., directors fees, legal exps., taxes, etc.	\$14,768
Divs. on old Laprairie stock.....	\$36,570
Bond interest	90,137
Applicable against common stock.....	\$255,196
Deduct $1\frac{1}{4}$ per cent on.....	25,000
Carried forward from year's operations.....	\$230,196

The earnings for the year are equal to $12\frac{3}{4}$ on the capital stock, and after payment of dividend of $1\frac{3}{4}$ per cent declared after the close of the fiscal year amounting to \$25,000, equal to $11\frac{1}{2}$ per cent.

Construction of the new plant for the Fairmont Brick Co., at Fairmont, W. Va., is progressing rapidly, and the plant may be ready for operation within two or three months. This company was formed with a capital stock of \$50,000, and has located its new property on the lines of the Baltimore & Ohio railroad. The plant will have a capacity of 50,000 brick per diem, manufacturing both building and common brick. It is also possible that the firm will enter the paving game.

Assured of a full year's work through the contract for all of the common brick to be used in the car plant at Rosslyn, Ont., the Superior Brick & Tile Co., of that place, has started its yard and is running to capacity.

It is expected that more than 100 men will be employed by the Boonville (Mo.) Brick Co. before the end of the summer. This yard, although a small one, has good material and excellent management, as well as a steadily increasing local demand for its product.

The plant of the old Hunt Brick Co. at San Point, Idaho, will be opened in a few days, under the management of Oscar Anderson.

A shortage of common brick is reported by the flood district of Ohio, where common brick plants suffered more than those making face brick. The situation is appreciated by the face brick men, who see a chance to work off the accumulation of culls that threatened to choke some of the Ohio yards the latter part of last year.

The Cherryvale Brick Co. has started its plant, two miles north of Cherryvale, Kas., after a shut-down of over two months. It is now equipped to burn coal.

D. S. Haggard will succeed J. Harry Allen as manager of the Winchester (Ky.) Brick Co.

Fire Brick

The Osceola Silica & Fire Brick Co. of Osceola Mills, Pa., recently filled a contract for half of the No. 1 fire brick required in the construction of the Pittsburgh Crucible Steel Co.'s plant at Midland, Pa. The entire job called for between fifteen and twenty million fire brick. The Osceola Company recently spent \$3,000 in improvements to its plant.

The McLain Brick Co., operating the plant of the Champion Brick Co. at Silvers Switch, near Wellsville, O., and the Kenilworth Brick Co. at Newell, W. Va., are both working on extraordinarily large contracts. The former is turning out 4,000,000 brick for the Brier Hill Steel Co., Youngstown, while the Kenilworth plant is turning out an equal number for the new Homer Laughlin and Edwin M. Knowles China Co. plants at Newell, W. Va.

The Elk Fire Brick Co., having plants at St. Mary's and Dagus, Pa., has made improvements to the first named plant and rebuilt the latter with brick and steel construction.

Referring to "Queer Inquiries and Orders" received by dealers, W. L. Macatee & Sons, of Houston, Texas, recently received an order from customers for shipment of fire brick for trimming (or lining) a grave. "Our customer did not go into particulars, that is, if the brick were wanted for ornamental purposes or other use," comments one of the firm in a letter to this journal, "but we are certain, however, that if for other use, the occupant of the grave was not a native Texan, for while we have some warm citizens, we are certain that no native Texan would have to be encased in Fire Brick after his death."

A new fire brick plant is to be located at Fulton, Mo., where \$150,000 is to be spent on land, building and equipment. The township authorities are to give a bonus of \$10,000 to the new company.

New tracks are being laid at the American Fire Brick Co.'s plant at Mica, Wash.

Pueblo, Colo., boasts the finest show rooms for the display of fire brick west of the Mississippi. Recently opened at 604 North Main street, that city, by the Standard Fire Brick Co., they will contain a full line of fire clay products, assayers' supplies, hollow brick and tile.

The Lock Haven Fire Brick Co., of Lock Haven, Pa., has received an attractive order from the English Government, for from 25 to 35 different shapes of fire brick and shapes. These brick are to be used in the construction of battleships, now ordered for that government. The shipment will approximate 100,000 pounds.

Capital stock of the Bickford Fire Brick Co., of Clearfield, Pa., has been increased to \$1,000,000. The company has a branch office in Pittsburgh, Pa.

The Superintendent

A DEPARTMENT CONDUCTED FOR THE INTERCHANGE OF IDEAS IN METHODS OF MANUFACTURE

Contributions from our readers are solicited for this department on any subject pertaining to the manufacturing end of the industry. Short cuts and labor-saving suggestions are particularly sought. Address all communications to the Editor of the Superintendent Department. Brick and Clay Record, Chicago.

To produce the best results machinery should be kept at its best. The following conditions which are uncommon in the engine room have no right to exist:

1. Leaky throttle valves, allowing steam to waste through dead engines.
2. Leaky steam traps, allowing steam to waste continuously.
3. Leaky valves in small piping and bleeder valves carelessly or unnecessarily left open.
4. Steam leaks at pipe joints, or from stuffing boxes.
5. Leaks around steam pistons, due to loose or worn rings.
6. Leaky steam or exhaust valves.
7. Leaky shut-off valves in steam pipe.
8. Jacket pressures carried too high or improperly regulated.
9. Steam valves improperly set.
10. Poor vacuum due to dirty condensers, air leaks or vacuum pump being out of repair.
11. Excess friction, particularly on pump plungers, because of tight or improper packing.
12. Improper lubrication.
13. Improperly adjusted bearings.
14. Slip and leakage around plungers or through pump valves. This is often the most serious loss in the engine room and in some cases tests have shown it to be as high as 30 per cent and 40 per cent. The principal causes are worn plungers or packing, lack of valve area and too high speed.
15. Running engines under throttle when they should be operated under cut-off with throttle wide open.

Sometimes there are structural defects which can be remedied at comparatively little cost. Such often cause serious losses. Hot water drainage goes to waste when it should be returned to the boilers. Oil is wasted because there is no means of recovering or filtering it. Steam cylinders, steam and hot water pipes are bare or the covering is of poor quality or insufficient thickness. There is a troublesome air pocket in the suction or an unnecessarily large supply pipe has been taken off the discharge main close to the pumps for feeding a railroad tank or street flusher. Air chambers are of insufficient capacity or improperly located, water hammer and imperfect filling of the pumps results. Suction pipes have numerous short bends or are laid without regard to grade. Possibly there is a whirlpool at the end of the suction pipe carrying air in the pumps. Perhaps the fly wheel "works loose" and frequent stops are made to drive the key. Why should these things be?

London Makes Brick From Refuse.

It has been demonstrated in London that brick can be made by utilizing the city's refuse, and the introduction of a similar system in American cities already has been given consideration, especially in Philadelphia. The London refuse destructor consists of a series of furnaces whose only fuel is refuse of every conceivable kind. Garbage, ashes, street sweepings, dead animals, bones and offal, excelsior, paper, crockery, glass and cans, all are thrown into the furnaces. The ashes into which they are finally turned are manufactured into a brick, which is said to be of exceptional quality, having a hard surface and capable of sustaining heavy pressure.

What is believed to be a new freak clay has been found in the bed of the Spring River in the heart of central Oregon. The clay resembles an asbestos fiber when burned, and the fact that it will not hold heat for more than a few seconds is one of its strange properties which has set scientists and geologists of the state to thinking.

The clay has a considerable portion of vegetable matter in its composition. When this vegetable matter is burned out the clay becomes flourlike. This flourlike powdered clay will stand an intense heat without showing any discernible change and can be picked up with the naked hand almost as soon as it is taken from the fire. In many respects it has the properties of a high-grade asbestos mineral, but no one has presumed to classify it as a sort of asbestos.

The vein from which the clay was taken is about 20 feet wide and is known to extend entirely across the river bed. How much farther it may reach has not been ascertained.

Useful Little Hints

When oiling machinery, make it a point to keep your coat buttoned. When open, the coat is liable to catch in some of the machinery and cause a serious accident.

The most valuable asset in any business or vocation in life is knowledge. The man who knows most and uses what he knows is the man who succeeds best.

Watch lubricated parts and see that they are kept properly cleaned. A mixture of dust and grease in the bearings wears them out.

Set down in a small book all repairs and alterations made to the machinery, with particulars as to date, time required and material used. By this means you can keep a more watchful eye on the expense of that particular department.

An ideal grog should have a composition closely corresponding to 45 per cent of alumina and 55 per cent of silica.

Keep your tracks in the clay pit cleaned. Untidy tracks make difficult walking for both men and horses and that means impaired efficiency. Why not use crushed bats to ballast between the rails?

The dust which blows about the grinding shed contains the most useful portions of the clay used in fire brick and is far purer than the usual material. When it is difficult to box the machinery a little water thrown on the contents of the mill will greatly lessen the dust, without in any way lessening the output.

Keep rails, tools, hooks and other pieces of metal away from the clay. This is obvious, but nevertheless accidents are common from this cause. An old horseshoe in a pug mill may mean the purchase of new blades.

Sand-Lime Department

THE SAND LIME BRICK ASSOCIATION.

Headquarters: 211 Fillmore Ave., Buffalo, N. Y. Officers:

S. O. Goho, president, Harrisburg, Pa.
 F. B. Allan, vice-president, Toronto, Ont.
 W. E. Plummer, Jr., secretary, Buffalo, N. Y.
 John L. Jackson, treasurer, Saginaw, Mich.
 Executive Committee: G. Silvester, Calgary, Alta.; E. G. Chapman, Minneapolis, Minn.; E. M. Burchfield, Rochester, N. Y.; H. H. Tift, Tifton, Ga.; L. W. Penfield, Willoughby, O.

The Valrico Sand Stone Co. of Valrico, Fla., has changed hands, a deal being closed by which three of Tampa's enterprising citizens became possessed of the plant, which has been in operation for the past seven years at Valrico, Fla., and which has done a tremendous business. The men interested in the new proposition are R. H. Goeke, W. T. White and A. W. Butler. While the consideration of the sale is not given out, it is known that the plant is valued at \$40,000. The sand stone brick, which has been manufactured by this concern, is said to be in great demand and it is the intention of the purchasers to add materially to the plant in order to increase the output. Additional machinery will be ordered at once, and it will be the aim of the company to increase the business materially. The output at the present time is very heavy and there are many orders booked. The officers of the new company are W. T. White, president and treasurer; R. H. Goeke, secretary, and A. W. Butler, manager. Mr. Butler, who will have active charge of the work of the plant, is an expert in that line. He has worked at the business and perfected himself along this line in Germany, and after receiving his training had many years of practical experience. For some time he has been identified with the Valrico Sand Stone Co.

The International Lythoic Co. has established a plant for the manufacture of sand lime brick at Clementon, Camden Co., N. J.

C. F. Pratt, manager of the Golden Gate Brick Co., says: "Our sandstone brick plant at Antioch, Cal., has had a very good year and is just finishing deliveries for the Methodist church at Tulare, Cal., requiring a quarter of a million brick. We have had a big year on fire brick, in fact, the best yet, and have taken several nice contracts for next year."

The Killbuck Silica Sand Co. has been formed at Millersburg, O., and will have main offices at Warren, O. The company has a capital stock of \$150,000. Of this amount, \$50,000 is preferred stock, drawing seven per cent. There are 82 acres in the property taken over by this company, and it is possible that the firm will later manufacture silica brick.

At Mt. Union, Pa., the capacity of the Mt. Union Silica Brick Co. has been increased to 75,000 brick per day. Because of the growing business of this firm it is necessary that the production be augmented.

J. A. Walker of Chico, Cal., has taken up the matter of establishing a sand-lime brick plant at that place, and has been endeavoring to get subscriptions for a capital of \$22,000, the estimated cost of the plant.

Who Is Who

In the Clay Product Industry



J. C. ADAMS.

Twenty-three years ago a young man was office boy, auditor, salesman and general manager of a building supply company, which was at that time getting a good foothold in Pittsburgh, Pa., by square dealing and "delivering the goods." This "youngster" was J. C. Adams. But, as said before, that was 23 years ago.

In the meantime, lots of things happened. Mr. Adams took some stock in the company, and in due time he was made secretary-treasurer of the company. Then, the Darlington Brick & Manufacturing Co., of Darlington, Pa., was formed, and Mr. Adams was made secretary of this corporation.

Mr. Adams, however, held all of these jobs, and then some more. He sold a lot of goods, directed the salesmen and all that sort of thing while in the offices of the D. J. Kennedy Co.

But—on April 1, Mr. Adams retired from the office of the Kennedy company and became associated as general manager with the Malcolmson-Houghton Builders' Supply Co., of Detroit, Mich., a concern which possesses eleven active yards, one of which covers eight acres and another three acres.

"Last year there was \$26,000,000 in building permits issued in Detroit," said Mr. Adams to a representative of "Brick and Clay Record," "and there is less competition than in Pittsburgh. The field is larger, and while I hate to leave old associates, it is a matter of business, you know. I will retain my interests in both the brick and supply companies."

Who will succeed Mr. Adams with the D. J. Kennedy Co., is not known at this time. Mr. Adams is one of the most popular building supply men in the Pittsburgh district, and is known to the face brick manufacturers throughout the country. His hundreds of friends wish him unbounded success in his new position, and confidentially expect to see him stir up the brick interests in Detroit and the adjoining territory.

The Federal Clay Product Co.

Mineral City, Ohio

Fire Brick for Kiln Work Made a Specialty

ROBERT W. HUNT JNO. J. CONE JAS. C. HALLSTED D. W. McNAUGHER
ROBERT W. HUNT & CO., ENGINEERS
INSPECTION AND TESTS OF BRICK AND ALL
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New York and every large city

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THE BUCKEYE ROLLING MILL COMPANY

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Write or
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No order too large to handle promptly or too small to secure immediate attention.

Kiln and Burner

In view of the importance that the gas-producer is now assuming in the brick and clay industry, the result of the investigation of the subject by the United States Bureau of Mines is of considerable interest. The bureau found that one of the reasons why the use of the gas producer as a source of power has not increased more rapidly during the last few years is that at many plants, operating under commercial conditions, high-grade coal has to be used to insure efficiency.

The object of the gas-producer investigations of the bureau is to determine with exactness the conditions within the producer during operation and to apply the results obtained to the development of a producer that will utilize efficiently large quantities of the poorer grades of fuel, culm and other coal-mine refuse now wasted. The study of the possibilities of a producer that melts the ash and permits its removal in a fluid state was regarded as pioneer work in a promising field, and experiments with an experimental producer of this type were carried on during the last year.

In the course of these experiments thirty-two tests were made at various rates of combustion, with different thicknesses of fuel bed, and with and without steam in the blast. The air blast was preheated in some tests and in some it was not. In most of the tests coke was used as fuel. One test was made with Rhode Island graphite anthracite, one with Pittsburgh slack, one with Texas lignite and two with Philippine coal.

Preheated air in the blast gave a more fluid slag and a richer gas than air at room temperature. The results of using steam were somewhat unsatisfactory, undoubtedly because the steam entered too near the top of the fuel bed. The introduction of a little steam with the air through the air tuyeres gave much better reduction of the steam than the introduction of the steam through the steam tuyeres.

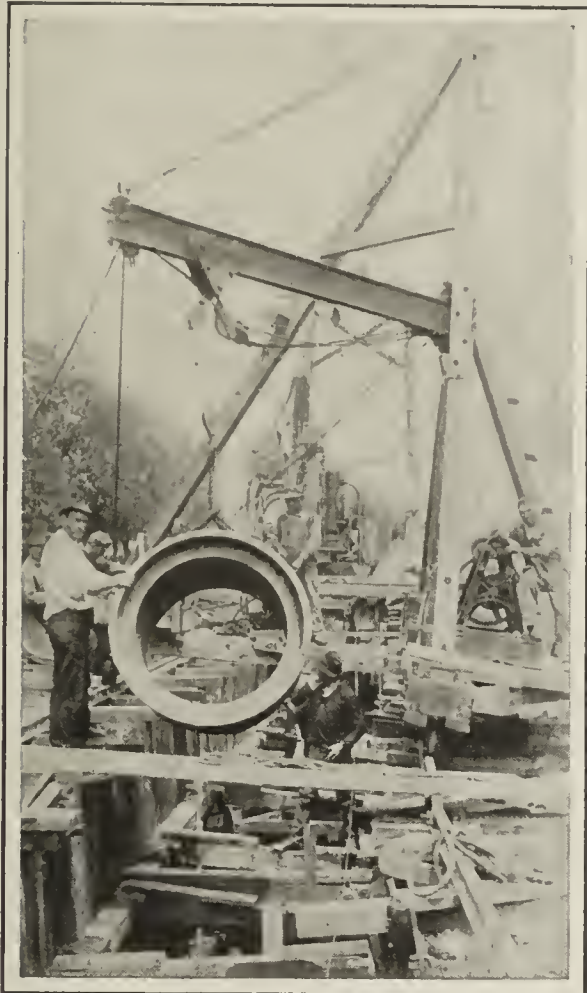
In the tests with coke a fluid slag could readily be made. The Rhode Island anthracite, though it contained 18 per cent ash and burned with difficulty in an ordinary grate, gave excellent results. The slag could be tapped off every hour, and the quality of the gas produced was satisfactory.

In the tests with Texas lignite and Philippine coal the gas was excellent, but the fuel disintegrated rapidly after being charged on the fire, and there seemed to be difficulty in maintaining a combustion zone sufficiently hot to fuse the ash and limestone. In the test with Pittsburgh slack, the gas produced was excellent; the indications being that the ash could be slagged readily.

The coke brick is now said to be very common in the North of Prussia. This brick is made, according to a foreign journal, by working a certain amount of crushed coke with clay. The coke replaces a corresponding volume of clay, and the coke disappearing during burning, leaves very little ash, and a void is produced. Hence the light, really porous, consistency of the brick, the substance of which is disunited to such an extent that nails can be sunk in it. To secure more perfect combustion of the coke, the brick is hollow lengthwise, which further increases lightness. The coke brick has a tensile strength of 26 kilogrammes per sq. centimetre; its form is very regular and the edges sharp. Amongst its various uses is the prevention of damp walls.

Sewer Pipe

As all those who have had experience can amply testify, the handling of large size sewer pipe is a problem in itself, and from the time it leaves the press until it is laid in the trench, it must be manipulated carefully, that it may



not be cracked or broken. The above illustration shows how a 42-inch pipe was lowered into a sewer which was being constructed in New York City. As may be seen, it takes considerable engineering ability to properly lay one of these mammoth pipes.

A New Use for Vitrified Clay Pipe.

Engineers employed in the construction of new wharfs at Terminal Island, San Pedro, Cal., have been experimenting with considerable success, with vitrified clay pipe as a protection to piles, from the destructive parasites, according to "The Architect and Engineer." It has been the custom heretofore to creosote the wood piles to protect them from the ravages of the teredo and limoria. This process is expensive and by the use of vitrified clay pipe it seems that the problem of securing a less costly substitute has been solved. The wooden piles are covered with 14 or 16 in. clay pipe, the pipe being placed over the piles as soon as they are driven, and allowed to sink with their own weight into the mud at the bottom and the space between the pile and the pipe filled with sand, which is particularly disliked by both the parasites mentioned.

A special department under the City Engineer of Louisville, Ky., has been at work for some time preparing plans for hundreds of thousands of dollars worth of salt-glazed vitrified pipe sewer construction.

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THE CELEBRATED EGYPTIAN PAVING BLOCK

THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

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SHAWMUT VITRIFIED PAVING BRICK WORKS

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Vitrified Shale and Fire Clay

Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

PURINGTON PAVERS

ARE MADE OF



The Purington Paving Brick Co.
GALESBURG, ILL.

Machines and Equipment

The Marinette Iron Works, Marinette, Wis., is shipping a second conveying outfit to John Heim for his yard at Decorah, Iowa. This brick conveyor is similar to the one which Mr. Heim installed at his Dubuque yard three years ago. The company is also preparing to ship two conveyors to the Geo. Frid Brick Co., Hamilton, Ont.

G. C. Stoll is in charge of the Bonnot Co.'s new office in Los Angeles, Cal. The location is the same as before—in the Higgins Building—but the room number is 823.

The Heron Lake Brick & Tile Company, Heron Lake, Minn., has installed a special No. 2 Dodge Eureka Water Softener. This machine is rated 125 gallons per hour.

The Standard Roller Bearing Co., of Philadelphia, has now opened an office in Indianapolis, Ind., in charge of L. M. Watkin, Jr., the office being located in Room 1201 State Life Building. It was found necessary, on account of the rapidly increasing demand for its products, to divide up the territory formerly covered by its Chicago office and open this office in Indianapolis.

"A Little Journey to the Home of the Economy Turbine," written by Elbert Hubbard as the result of his visit to the works of the Kerr Turbine Co., Wellsville, N. Y., includes an interesting discussion of steam economy from the time of James Watt to the present. Mr. Hubbard has displayed such unusual ability in making interesting reading of a subject generally termed "dry," that when one engineer reads this booklet, he wants everybody in the plant to read it. The Kerr Turbine Co. will send a copy on request.

"An Important Letter" is the attractive title on the cover of a folder, recently issued by the Gandy Belting Co., of Baltimore, Md. The folder contains a copy of a letter from the Bessemer Fire Brick Co., Birmingham, Ala., telling of an 8-ply, 26 in. Gandy belt, which had been in constant use at the Bessemer plant for the past 7 years. The belt had given way, at the point of lacing, for the first time in the manufacture of 140,000,000 fire brick, but with a 4-ft. section to replace the worn portion, the company felt the belt would be practically whole again. This is a record to be proud of and is a strong testimonial to the wearing qualities of the Gandy belts.

A letter from the Richmond Brick Co., with offices in New York City and plant at Greenridge, S. I., to the Eastern Machinery Co., New Haven, Conn., states that the company made 66,688 brick with one of the Eastern Company's New Haven brick machines in 9 hrs. and 30 minutes. They used 7 brick moulds which made a speed of about 21 moulds per minute, which is pretty rapid work for a soft-mud brick machine and it is evident that the machine did not give much trouble that day. The Richmond Company has used three New Haven machines for the past ten years. The Eastern Machinery Co. challenges comparison with the above record, which it claims exceeds any so far made.

The Letter Box

The first response from a clayworker to the appeal to our readers for an opinion on the suggestion of some sort of a central clearing house in the clay products industry comes from our old friend, John Berwald, of the Davenport Brick & Tile Co., of Davenport, Ia. He says:

Your remarks on pages 742 and 743 of your May 1st issue please me highly. I believed you was working for an association of this kind when you started in your lively campaign. We need one if we want to make a success as brick manufacturers.

The vice-president of the Brick Makers' Union showed good common sense in his remarks at the last convention. It is ridiculous to see the clay people trying to work in each branch separately instead of *pulling all together*, as the concrete, lumber and other people are doing.

Since the journal enlisted aggressively several months ago in the work to encourage the clayworkers of the nation in the "get-together" spirit, Mr. Berwald, who has endorsed all we have said by applying many of the suggestions to his own profit, has steadily maintained that just such an organization as mentioned should be formed. The lesson that Dayton teaches us emphasizes the importance of Mr. Berwald's plans.

Here are some cheering words from Frank M. Wallace, of Willamina, Oregon, who, in remitting for his annual subscription, did not forget to show his appreciation of what "Brick and Clay Record" is doing for him:

"Brick and Clay Record" is a great help to me, in that its articles are of a progressive nature. It gives us interesting news of our ceramic schools and their advancement in which we all are immensely concerned. It is only through experiment that we are able to increase the efficiency of our plants. It means study of conditions or education in things concerning the materials.

Thanking you for your keen interest in things concerning your readers, which, of course, is no more than is expected, but the expression of the same is not always given, I remain, Yours very truly.

A few lines like those lighten the labors considerably. All of us are willing to work for the good of others, but, being human, we are not loathe to being told how well we are doing it.

Our friend, John Andres, of the Standard Brick Manufacturing Co., of Evansville, Ind., is also another reader who shows his appreciation of this journal's fight to advance the interests of the clayworker. The Standard company is one of the few enterprising plants in the country which feels the importance of local publicity as a means to create a demand for its product. One of the Standard ads is reproduced in Mr. Wells' article on salesmanship on another page. Mr. Andres writes:

Kindly send us an extra copy of No. 3, Vol. XLII, "Brick and Clay Record," and also enter our subscription for an extra copy of the journal for one year.

The reason we desire an extra copy is on account of the many splendid publicity articles which you have been publishing recently, and which we desire to have recopied as much as possible in our local papers.

This is the spirit that is needed among the clayworkers of the nation. If we had more John Andres and less John Tindities brick would soon come into its own.

IF YOU HAVE A WANT.

Make it known in "Brick and Clay Record's" Classified Columns. They bring results.

THE DECKMAN-DUTY BRICK CO. CLEVELAND, OHIO.

THE HOME OF MEDAL BLOCK AND
THE BEST BRICK PAVED CITY AND
COUNTY IN THE WORLD

FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

— MANUFACTURERS OF —

Dover and Buckeye Fire Brick

Unexcelled for Kiln Purposes

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A J A X FIRE BRICK



Two of the many hundred kilns built of these famous brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.

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Cars DRYER and CLAY

Write for Data

Koppel

Rails—Frogs—Portable Track

Sales Offices

New York—Pittsburgh—Chicago—San Francisco—Montreal

Plant—Koppel, Pa.

Orenstein-Arthur Koppel Co.

Fire Brick Facts For Kiln Builders

Do not overlook the quality of Fire Brick used in inner walls, crowns and fire arches of your kilns; this is all important. When fire brick begin to give away the whole kiln is impaired.

No brick construction will stand under strain of gradual contraction account of poor quality fire brick.

Consult us in advance of placing your orders.

Davis Fire Brick Co. Oak Hill, O.

BRICK MAKERS

Many of the largest users in your line, after costly competitive tests and experiments, are now specifying—

Evens & Howard Fire Brick

BECAUSE OF

QUALITY, PRICE AND SERVICE

We will be pleased to furnish complete information and quote prices on request.

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Established 1856

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Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

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Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building

Encaustic Tile

Manufacturers of floor tile will do well to look to the progress of cement tile, particularly the output of a factory at Mobile, Ala. If, as is claimed by encaustic tile men, the unpopularity of cement tile has been due largely to its high cost, it will be of interest to all concerned to know that we have been creditably informed that black and white tile, 6x6 and 9x9 can be produced at this factory for less than half the price now being charged tile dealers for encaustic reds in similar sizes. While not questioning, in any way, the superiority of clay tile over cement, we wish to point to the fact that the cement tile people are putting out attractive literature pointing to a superiority which they claim cement tile has over encaustic. One story is good until another is told and as a consequence, these cement tiles are being used in a number of buildings in the south, replacing clay tile in every instance. Clay tile men have dismissed the cement tile from their calculations, figuring that the cement tile men were intent upon making foreign sizes and ornate color and pattern work. The fact is that the cement tile men are learning and beginning to conform to the usages of the larger cities, and, at the same time, planning tonnage instead of individual jobs. There is some talk of establishing branches of the Mobile concern in Chicago and in Indianapolis, Ind. This is not written as a boost for cement tile—it is to warn our readers in the encaustic tile business that there is more in the cement tile game than they are willing to believe, and that a danger known and faced is a danger half defeated.

The Watters Mantel & Tile Co., of Buffalo, N. Y., has filed a certificate of incorporation, capitalizing at \$10,000. The directors are Mary L. P. Watts, Richard C. Watts and Adon W. Crosby.

A booklet of about 70 pages, attractively printed and of convenient pocket size, is published by the B. F. Goodrich Co., of Akron, Ohio, and will be sent gratis to anyone who may be interested enough to write for it. Compiled from data furnished by the manufacturers of motor-trucks, it is authentic and dependable, and the information is boiled down in a way that makes it valuable to the busy man who has too little time to wade through a number of catalogues before he decides what kind of a truck best suits his requirements. It is called "Motor Trucks of America" and should be read by every one who owns a motor truck or who ever hopes to own one.

Dr. T. Poole Maynard, Mining and Consulting Geologist, of Chattanooga, Tenn., has just been engaged by the Central of Georgia Railway to investigate the deposits of clay, kaolins and other materials used in brick-making, that are on the line of the road and as yet undeveloped. This research should result in the commercial development of clay-working properties in sections hitherto devoid of industries of this character.

After being deadlocked over the selection of the face brick for their new hospital, the city council of Sterling, Ill., finally decided to use Western Brick Co.'s gun-metal shade 810, a brick that was offered for \$16 per M. f. o. b. cars Sterling. The contract was taken by the Simpson Lumber Co. of Sterling.

Hollow Block

As the new year advances, several large contracts have come to the surface, which means a large consumption of clay products in the Pittsburgh district. The first of the big jobs to be announced is the erection of a twelve-story department store to occupy an entire city block, which will be built by the Rosenbaum company, whose capital stock has just been increased from \$1,000,000 to \$4,000,000. Every modern improvement known to the builder's art will be installed in this new store, and this means the extensive use of hollow tile.

Business has opened with a rush for the hollow tile people of Texas and from personal observation it would appear that nearly all of the brickyards and tile makers were sold to capacity and at good prices. From every indication this will be the best year for fireproofing materials that Texas has seen and every one connected with the business is correspondingly happy. The Texas Clay Products Co., of Fort Worth, are making about 50 tons of hollow building tile daily and their output is sold for the next four months.

Test wells are being drilled on the property of the National Fireproofing Co., at Logan, Ohio. The company recently appropriated \$10,000 for this work.

The Moscow (Idaho) chamber of commerce recently appropriated \$2,400 to cover the expense of collecting, testing and preparing for exhibition, the several varieties of clay that are found in the vicinity of that city. At present all hollow tile, brick and other clay products used in Moscow are imported and it is thought that a local plant will be started after the matter has been thoroughly canvassed.

Labor trouble in the Raritan (N. J.) district was short lived, and although it threatened to be serious, the situation was handled with excellent judgment by all parties concerned. The strike cost the county more than \$3,500, and this is a loss that will be assessed against the taxpayers generally, a precedent having been set last year, when the Perth Amboy (N. J.) plants refused to reimburse the county for expenses incurred in maintaining order.

The Pennsylvania Fireproofing Co. of St. Marys, Pa., has built another plant, with a capacity of 200,000 brick per day.

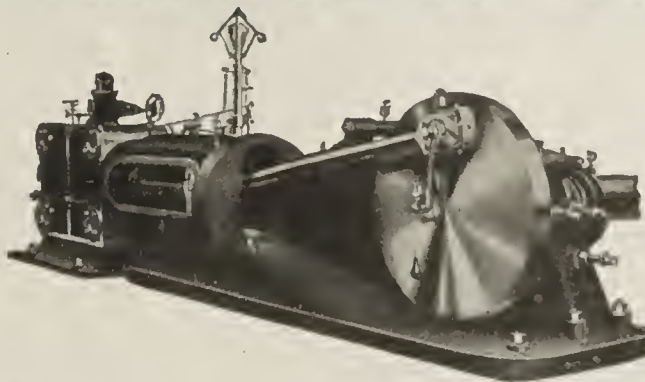
The National Fire Proofing Co., of this city will build an addition to its eastern plant which is located at Port Murray, N. J. An electric light plant will also be installed at this plant.

Educate your neighbors to build the rat out of existence by building "rat-proof" houses of clay products, allowing no openings for rats to get in.

With properly constructed walls of hollow tile and foundations of brick, Mr. Rat will have to seek other means of sustenance than his present easy pickings in the family larder.

Contributions to this department are solicited. Co-operation on the part of our readers will be greatly appreciated in an effort to make this department interesting—EDITOR.

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"Want and For Sale" Page

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CERAMIC ENGINEERS
FACTORY ARCHITECTSGEOLOGICAL EXAMINATION OF PROPERTIES
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PLANTS DESIGNED, CONSTRUCTION SUPERINTENDED
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DRIERS, FURNACES, KILNS

REMODELING OLD PLANTS GIVEN SPECIAL ATTENTION
DEVELOPMENT OF NEW LINES OF PRODUCTS

Pamphlet, "Ceramic Engineering." Free

Drain Tile

Ernest Beutler, proprietor of the Beutler Brick & Tile Plant, near St. Cloud, Minn., is now producing drain tile and hollow building block. Mr. Beutler and his sons have found that there is quite a demand for drain tile in their locality and they hope to greatly extend their business. Mr. Beutler has already shipped the first carload of this new product of his plant to Clearwater, where it will be used to drain a farm, the work of laying being done by Mr. Beutler's son, who understands the work thoroughly.

The property of the Ohio Valley Brick Co., at East Liverpool, Ohio, which manufactured a vitrified fire brick out of refuse from the potteries at that place, has been sold by the receiver for \$5,267 to E. L. McClintock. The plant will be converted into a tile manufacturing plant immediately.

Clay tiling is being installed on many farms of Ontario, Can., under the supervision of expert directors sent out by the Ontario Agricultural College.

Ellis Shookman, of Hoagland, Ind., has disposed of his share in the tile plant there, having sold it to his partner, Lawrence Hartzell, who will operate the plant.

The factory of the Fairmount Tile Co., located two miles west of Fairmount, Ind., has resumed operations after being idle for several months, and will soon be employing a full force of men.

W. D. Green, formerly of Marion, Ind., has purchased the plant and holdings of E. W. Geik at North Manchester, Ind., where he will manufacture drain tile from 4-in. to 24-in. inclusive, as well as hollow and face brick, partition blocks and fireproofing. Mr. Green says he has found the finest strata of clay in that part of the country, one vein burning white and the other very red. The new company will be known as the North Manchester Tile & Brick Works.

Laying tile is an important part of the proper construction of drains, even when the trench is made straight and on a uniform grade and, according to the "Bulletin," the first item of importance is providing a firm foundation on which to lay the tile. In irrigated lands there are often soft spots which need some special treatment. The best method in such cases is to lay long boards in the trench upon which to lay the tile. If some such precaution is not taken one or more tile may settle or be pressed out of alignment and form a complete obstruction. When laying tile through an orchard with the intention of operating a brush or root cutter, boards with cleats on each side to hold the tile in true alignment are sometimes used. Tiles are not always cut off squarely, and when laid they should be turned until the tops set closely together, leaving the bottoms open for water. The ground should be firm enough to hold a man on a blinded tile, and the tile layer should work from the tile, if need be. Tile should always be carefully covered or blinded, as it is called, as soon as it is laid; and, for safety, the trench should be back filled enough to prevent the banks from caving in. Sand-trap boxes, should always be put in at intervals of 300 to 500 feet, when fine sand or silt troubles occur, and also in orchards.

[Those interested may procure a copy of the Bulletin by writing the United States Department of Agriculture at Washington.]

Absolute Control of Temperatures in all Kinds of Kilns and Furnaces

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Recommended by the highest authorities

For measuring temperature between 0 and 1600 deg. Celsius, equal to 2920 deg. Fahrenheit. Successfully used in establishments for the manufacture of Brick, Pressed Brick, Terra Cotta, Pottery, Porcelain, Stoneware, Chamotte, Cement, Glass, Iron and Steel and other metals, particularly for Hardening and Annealing, also for Molten Metals, Cartridges and Ammunition, Chemicals, Gas Accumulators, and by Boiler Inspectors, Schools and Colleges.

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For Laboratory and Experimental Use

Fused Silica Ware of Every Description at Moderate Prices

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of every description. This Heraeus Patented Fused Quartz Glass is not affected by any changes of temperature whatsoever, and the co-efficient of expansion is only 1-17 that of platinum. It is of the utmost importance for all purposes where the above qualities are essential. Write for information. Pamphlets and References on Application.

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HOW TO ANALYZE CLAY

A Practical Work
for Practical MenAn aid to beginners and full instructions
for making clay analysis64 Pages with Illustrations
By HOLDEM M. ASHBYPRICE
\$1.00
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"BRICK AND CLAY RECORD"

445 PLYMOUTH COURT, CHICAGO

Legal Decisions

Lowest Responsible Bidder.—The word "responsible" in the phrase "lowest responsible bidder" in a statute providing for competitive bids before awarding contracts for public improvements in cities, the Supreme Court of Kansas holds, in *Williams vs. City of Topeka*, 118 Pacific Reporter, 864, implies skill, judgment, and integrity necessary to a faithful performance of the contract, as well as sufficient financial resources and ability. The government body of the city must determine whether one who presents a bid for a contract under the statute above referred to is the lowest responsible bidder; and such determination cannot be set aside by a court, unless the action of such tribunal is arbitrary, oppressive, or fraudulent.

Responsibility for Acts of Persons Held Out as Agents.—If one holds another out to the world and accredits him as his agent, he is bound by that person's acts done within the scope of the agency thus given him. In such cases the question is, the Supreme Court of Florida holds, in *Bush, etc., Co. vs. Conely*, 55 Southern Reporter, 867, not what authority was intended to be given to the agent, but what authority was the third person dealing with him justified from the acts of the principal in believing was given to him. Where a principal has, by his voluntary act, placed an agent in such a situation that a person of ordinary prudence, conversant with business usages and the nature of the particular business, is justified in presuming that such agent has authority to perform a particular act, and therefore deals with the agent, the principal is precluded, as against such third person, from denying the agent's authority. Whether or not an act is within the scope of an agent's apparent authority is to be determined, under the foregoing rule, as a question of fact, from all the circumstances of the transaction and the business. And where one of two innocent persons must suffer for the wrongful act of a third, he who gave the power to do the wrong must bear the burden of the consequences.

Dealing With Agents, Especially of Corporations.—It is elementary, the Supreme Court of Washington says, in *Brace vs. Company*, 115 Pacific Reporter, 341, that a principal is only responsible for acts of his agent performed within the scope of his authority, and that, to hold the principal to such responsibility, a third party in dealing with the agent must ascertain his authority, and know that he is acting within its apparent scope. Ordinarily it would not be difficult for persons dealing with one assuming to act as agent of a private individual to ascertain the nature and extent of his authority; but in dealing with an agent who, as manager or superintendent, controls or is in charge of a department of a great corporation, a different condition would be presented. Corporations necessarily act through authorized agents. The more extensive their business, the greater the number of their agents. If for its own purposes a corporation is compelled to employ an agent with such apparent authority as may mislead the public, it should be required to secure one who will not act in excess of his actual authority, and thereby deceive others. If each and every individual having business with such a corporation must at his peril ascertain and determine the exact scope and limitation of the agent's authority, it is manifest that he could not safely deal with the acknowledged agent, and that the business of the corporation itself would be materially impaired.



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The Henry Martin Brick Machine Mfg. Co.

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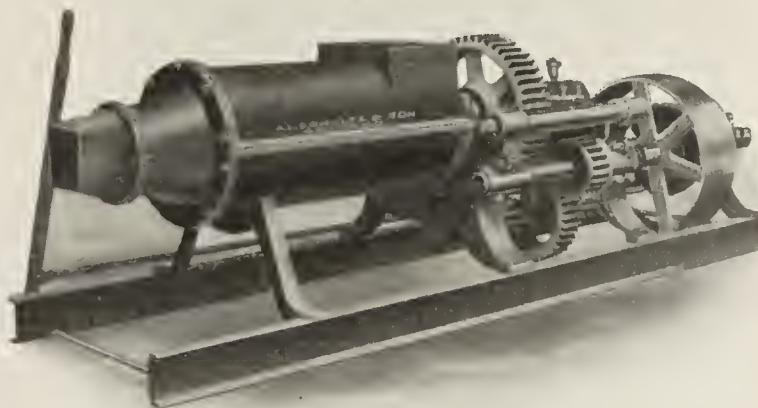
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For Brick, Tile and Terra Cotta Plants

We make a specialty of designing and furnishing complete machinery equipment for all kinds of clay-working plants, including expert engineering service in supervising erection and installation.



Double Pug Mill equipment, especially designed for the perfect preparation of material in the manufacture of terra cotta.

SCHULTZ HEAVY DUTY FRICTION CLUTCH

suitable for all purposes. If you are having clutch trouble, write to us and we will show you the way out of your difficulties.

Complete brick plants furnished promptly, including auger machines, pug mills, clay cars and granulator shafts.

Cutting and cut steel gears always in stock for brick machines, also granulator knives.

Remember, we are brick works engineers and will be glad to advise you regarding any improvements or repairs which you contemplate.

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We also make a complete line of Power Transmission Appliances, Engines and Boilers,

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Any driver can unload in one minute without damaging the brick if you use

The Martinsburg Brick Wagon

They slide out easily in a nice pile.

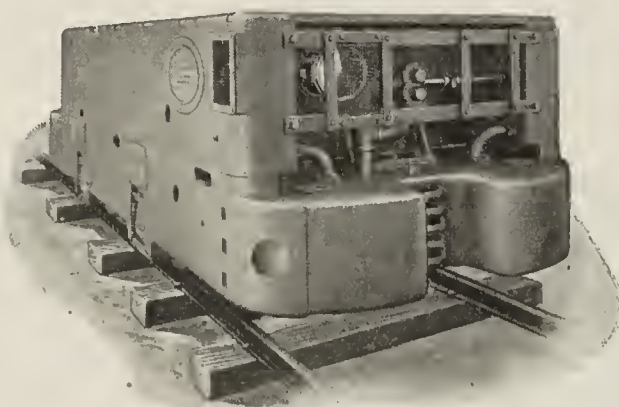
You increase the capacity of each team 30 to 50%.

We can refer you to users in every section who handle all kinds of brick.

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Gasoline Motors



Over 300 in Use—

Used by 150 Companies.

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Surface Haulage—

2½ to 16 Tons Weight.

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Rochelle, Illinois

Terra Cotta

In a special section of the Chicago Tribune devoted to the annual review of the Chicago business interests, William D. Gates, president of the American Terra Cotta & Ceramic Co., Chicago, Ill., tells of the rapid advance made in that branch of the clay industry. He says:

"The architectural terra cotta, tile, and pottery interests in Chicago are growing in volume and have gained an enviable reputation. Architects and owners in Chicago have been more insistent for quality of work than have those of other cities and the result has been that the manufacturers have been stimulated to utmost effort, and have made their ware the standard.

"The large number of tall buildings erected downtown during the last year have been either largely or entirely of terra cotta and most of them of enameled terra cotta, as also have been the Michigan avenue automobile buildings, the large number of fine apartment buildings and the homes of the city.

"This has been occasioned by the imperative need of a material that would wash, a material that would keep clean as long as possible, and could at any time be readily cleaned down. The large amount of smoke hanging about the city charged with sulphur gas has, when long continued, a marked influence on building material.

Not Affected by Weather.

"The enamel terra cotta is no more affected by this than is the bottle in which the acid is kept for use in the laboratory or drug store. The use of the steel skeleton for building necessitates just this kind of a covering.

"The steel is the bone of the structure and is protected and ornamented by the terra cotta covering. The steel and terra cotta skyscraper, which originated in Chicago, has become famous all over the world. Chicago architects, builders, and manufacturers set the pattern for the world, and today their methods influence building methods everywhere.

"Architects, builders and manufacturers are beginning to dare to use color. For a long time they held themselves strictly to line and relief work, but they are now adding color, and will more and more and with added effect, and no material lends itself better to this end than terra cotta.

Ornamental Work in Tiling.

"Much use is being made of ornamental tiling for exterior work requiring color, and largely for interior work, where it is particularly effective, and much more pleasing than many of the other materials there used. It is sanitary, cleanly, beautiful, and imperishable.

"Even in art pottery Chicago is coming to have a reputation. The manufacturers, taking as a motto that 'Nothing is too good for Chicago,' have made ware that has been widely and well received. Chicago opened the eyes of the world at the world's fair to the fact that it had art. Its clay workers are and have been active in showing what they could contribute to add to and keep their reputation in this field."

"In comparing the cost of terra cotta with other forms of ornamental material, terra cotta has a great advantage, especially if the ornamentation is repeated, as the same mold can be used for consecutive modelings. When properly made, the lightness of terra cotta permits its use in many places where stone or other materials could not be used on account of their weight.

"Terra cotta is practically indestructible by fire, water or frost, and in consequence, is especially desirable for facing the exterior of fireproof buildings where ornamentation is desired.

"In the manufacture of terra cotta there are many problems of which the ordinary mechanic knows very little. The completed piece fits so readily into place that it is hard to realize the difficulties under which the workmen have prepared it. Large surfaces, when burned, have a tendency to warp, twist, and shrink, and this must be carefully guarded against. Even with the smaller pieces, a slight variation in temperature causes destruction.

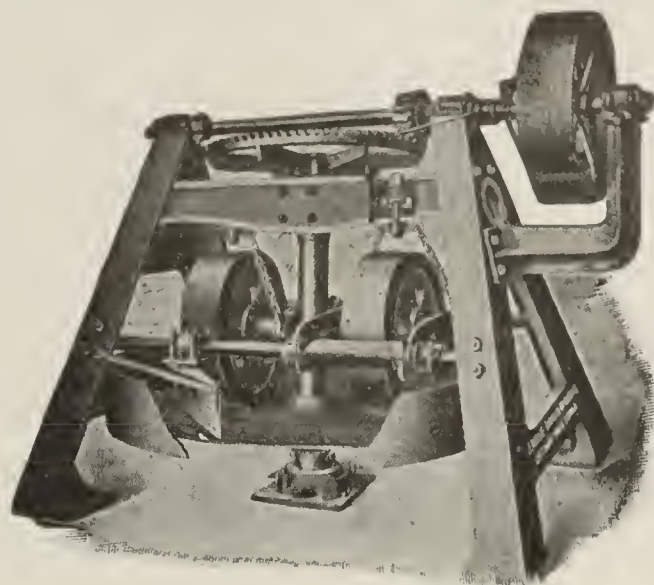
"One of the latest forms of terra cotta has the surface enameled so that it is absolutely impervious to moisture and can be washed when desired. This makes it especially desirable for lining interior courts, air shafts, etc., where every advantage must be taken to save what daylight enters and where smoke and soot soon darken the surface."



Entrance to Los Angeles Athletic Club Bldg. Terra Cotta
Furnished by Gladding, McBean & Co.

Architectural treatment of a brick chimney for a power house in Montreal consists of a buff brick for the body of the chimney, with a panel course of gray terra cotta blocks spanned by arches of the same material; this course is about 20 ft. below a projecting course of terra cotta near the top, says the "Building Age." The panels and arches project about 4 inches from the face of the chimney and are backed by common brick with circular reinforcing bands of iron, $\frac{1}{4} \times 2$ in. in size, laid between the two courses at regular intervals. The total height of the structure from the top of the foundation is 211 ft. with an external diameter at the bottom of 17 ft. decreasing uniformly to 9 ft. at the top.

The "Eagle" Dry Pan



With independent and suspended mullers,
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See this car before placing your order.

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General Purpose Cars, Transfer Cars, Turntables, Switches, etc.

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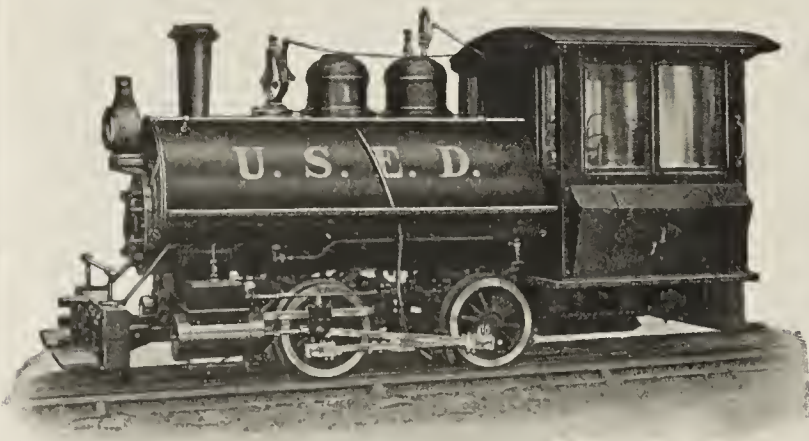
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Small Size—Reasonable Cost—Especially built for use of clay-products manufacturers', for hauling clay or shale from pits or mines to plant.

Cheaper Than Horse Transportation and will reduce costs of delivering your material to your plant, thus increasing profits.

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Seattle: 617 Western Ave. New York City, R. 2052 Grand Cen. Term. Bldg.
Canadian Representative: F. H. Hopkins & Co., Montreal, Que.

Freight Tariffs

One way of securing knowledge in freight rates is to institute a system in your own office, whereby you request a written confirmation of every rate quoted you. If the rate is given you by the district freight agent *keep after him for a confirmation*. If given by the local freight agent, apply to the district freight agent, *not for a confirmation but as a new request*, and then compare the information. A manufacturer in Ohio, shipping brick from the Canton district did this, and learned that rates "across Lake Michigan" were 70c per net ton less than "all-rail" rates from and to the same points. The local freight agent was quoting the "all-rail" rate, but the district freight agent's confirmation gave both the high and the low tariff. It took a special inquiry to find that the car ferry ran twelve months in the year. Freight billed out in the regular way with no mention of "across Lake Michigan" on the bill of lading carried a rate that was 33½ per cent higher than it would have been, had these magical words been added. This is one case where freight *knowledge*, even though obtained accidentally, was worth \$17.50 a car to the shipper.

Rate Complaint Filed.

Arguments relative to the alleged excessive rate between St. Paul and Duluth, Minn. were heard by the state railroad and warehouse commission May 13, at the state capitol building. The Twin City Brick Co. of St. Paul were the petitioners. Decision was reserved.

The following changes in established rates on the various commodities mentioned have been made since our last issue. Unless otherwise stated, the rates given are in effect May 15th, 1913.

From Eastern Points.

NEW YORK and points taking New York rates, enameled brick to Hastings, Minn., 44c.

PHILADELPHIA, PA., enameled brick to Hastings, Minn., 42c.

SCRANTON, PA., enameled brick to Hastings, Minn., 38c.

MAYS LANDING, N. J., common brick to Mt. Carmel, Pa., \$2.10 n. t. To Shenandoah, Pa., \$1.85 n. t.

GUTH, PA., brick to Inwood and Kings Bridge, N. Y., 11½c. To Ossining, N. Y., 13½c.

BEECH CREEK, ORVISTON, LOCK HAVEN, MILL HALL and KREBS, PA., paving brick, fire brick and fire clay to Culpepper, Va., 17c. To Lynchburg, Va., 18c.

WHIPPANY, N. J., common building and paving brick to Allentown, Pa., 7½c.

DUNMORE, PA., common building and paving brick to Philadelphia, Pa., 8¾c.

WILLIAMSPORT, PA., fire brick to Buena Vista, Va., 16½c.

From Middle West Points.

DAVENPORT and BUFFALO, IA., hollow building tile to South Haven, Mich., \$2.35 n. t.

EAU CLAIRE and CHIPPEWA FALLS, WIS., clay to Duluth, Minn., and Superior and Ashland, Wis., 8c.

DULUTH, MINN. and SUPERIOR and ASHLAND, WIS., clay to Eau Claire and Chippewa Falls, Wis., 8c.

EAST PEORIA, ILL., brick and articles taking brick rates, to Chatworth, Watseka, La Hogue and Gilman, Ill., 3¾c. Washington and Eureka, Ill., 2½c. Secor,

Gridley, El Paso and Chenoa, Ill., 3c. Forest Hill, Ill., 3½c.

CHICAGO, BEECHER, CHICAGO HEIGHTS, DOLTON, GRANT PARK and STEGER, ILL., common brick to Alexandria and Anderson, Ind., \$1.15 n. t. To Buchanan, Mich., 65c n. t. To Burnett, Ind., 95c n. t. To Crawfordsville and Covington, Ind., 90c n. t. This tariff carries other rates to points in Indiana and Illinois.

CONNEAUT, OHIO, brick and articles taking brick rates to Sugar Creek, Mo., 5c.

TERRE HAUTE, IND., drain tile to Toledo, Ohio, 8c. To Battle Creek, Kalamazoo and Lansing, Mich., 7½c. To Grand Rapids, Mich., 8c. This tariff carries many rates to points in Ohio, Indiana, Illinois and Michigan and other Central Freight Assn. territory.

CLAY CITY and PATRICKSBURG, IND., clay to Momence, Ill., 3½c.

SARGENTS BLUFF and DES MOINES, IA., brick, except bath or enameled, blocks, paving and creosoted, fire clay, clay conduits, fine shale, drain tile, fireproofing, lining flue tile, not glazed or enameled and furnace tile, to Oakes, N. D., 17c.

ST. PAUL, MINN., hollow brick, building and paving blocks, common or fire clay, drain tile and fire brick to Walker, Bemidji and International Falls, Minn., 9c. From MINNEAPOLIS, MINN., 10c. From MINNESOTA TRANSFER, MINN., 12½c.

From Western Points.

LAWRENCE, KAS., paving brick to Lincoln, Neb., 8c. To Omaha, Neb., 7c.

FREDONIA, KAS., enameled brick to Council Bluffs, Ia., Beatrice, Lincoln, Nebraska City, Omaha and South Omaha, Neb., 15½c.

BIG SIX, WASH., brick, common or paving, to Portland, Ore., 8¾c.

DENVER, COLO., brick to Chimney Rock and McGrew, Neb., 12½c.

PITTSBURG, KAS., drain tile to Kansas City, Mo., 5c. To St. Joseph, Mo., 7½c. To Sugar Creek, Mo., 5c.

CANEY, CARLYLE, CHANUTE, CHERRYVALE, COFFEEVILLE, ELK CITY, FREDONIA, HUMBOLDT, IOLA, INDEPENDENCE, PERU and PITTSBURG, KAS., brick and drain tile to Arrington and Bevard, Kas., 8c. Clay Centre, Kas., 9c. Drake, Kas., 8c. Easton, Kas., 7c. Walsburg, Kas., 9c and Winchester, Kas., 7c.

From Southern Points.

MARLBORO, S. C., common brick to Rockingham, N. C., \$1.30 per M. brick. To Ocilla, Ga., \$5.24 per M. brick. To Maxton, N. C., \$1.30 per M. brick.

(Effective May 17th, 1913.)

DE QUINCEY, LA., common brick to Baton Rouge, New Orleans and Port Chalmette, La., 7½c. Fire brick, 13½c.

BATON ROUGE, NEW ORLEANS and PORT CHALMETTE, LA., common brick to De Quincy, La., 7½c. Fire brick, 13½c.

(Effective May 22nd, 1913.)

KINGSPORT, TENN., common and building brick to Harris and Randall, N. C., \$1.85 per M. brick.

(EDITOR'S NOTE—Readers are urged to write "Brick & Clay Record" reporting petitions and complaints filed and similar items which will be of general interest to shippers of clay products. Questions regarding freight matters will, when possible, be answered promptly by mail or through our columns.)

To Prevent Scum Appearing on Your
Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

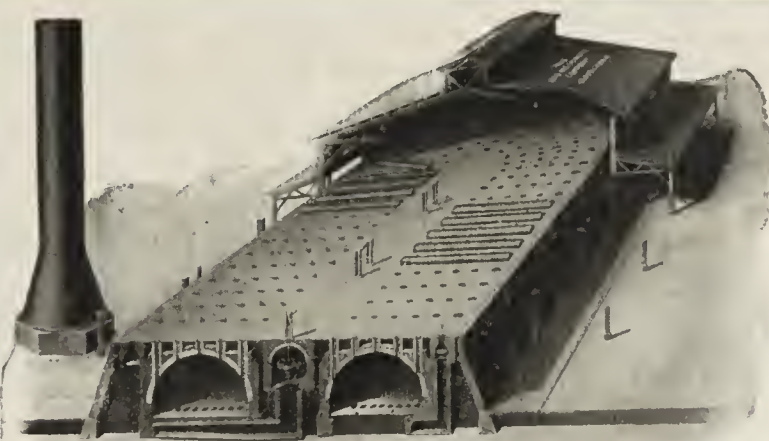
Literature on Application

Other High Grade Chemicals For
Clay Industries

The Roessler & Hasslacher
Chemical Company

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New York



REGENERATIVE CONTINUOUS TUNNEL KILN

FOR

CLAY PRODUCTS

The Gas Machinery Co.

Cleveland, Ohio

SECOND REASON WHY "NESTOR" IS UNEXCELLED FOR BRICK PLANT WORK

ALWAYS PLIABLE, FLEXIBLE,
NEVER BECOMES HARD
LIKE A BOARD

DO YOUR BELTS CONTAIN
THIS FEATURE?

The American Fabric Belting Co.
Cleveland, Ohio

With the Potter

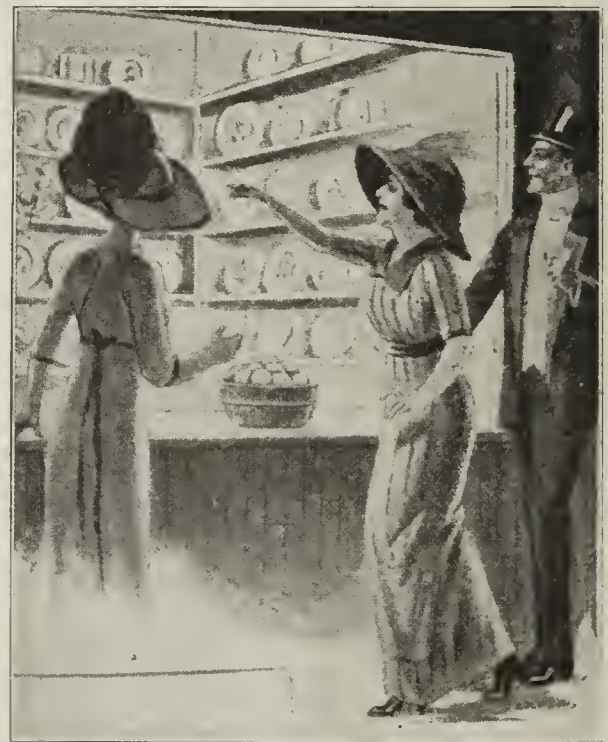
During the last few weeks, it is said, it has been practically an impossibility for the East Liverpool potteries to secure enough boys with which to fill out their working forces. As soon as one boy lands a job, the foreman of a rival shop appears and offers him higher wages. An industrial news bureau sends out the following notice:

Wanted—300 sturdy boys, from 16 to 22. Wages \$1.50 to \$2.25 a day. Chance of advancement, learning the trade and securing good positions in plants now under construction. Apply East Liverpool Potteries.

Two new potteries are being erected at Newell, W. Va., directly across the Ohio river from East Liverpool. These plants, the most modern of their kind in the country, will afford employment for about 800 people. The date set for their initial operation is next fall.

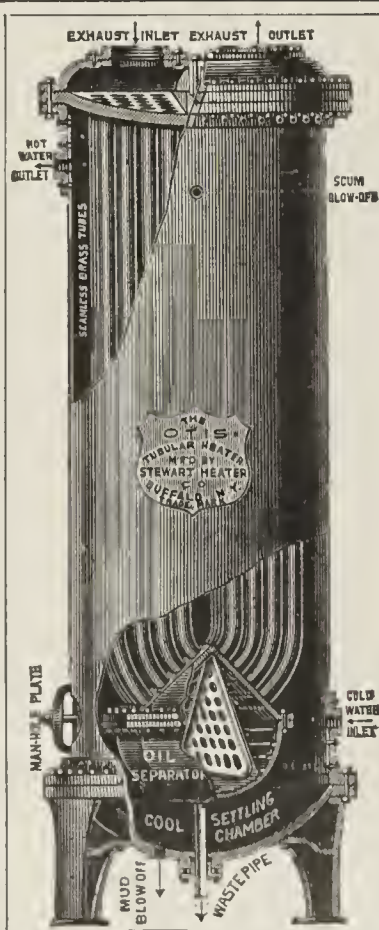
Manufacturers are considering advertising for boys in the city dailies and periodicals.

In lieu of the time worn sports of "knocking down nigger babies" and shooting clay pigeons the smashing of china has been substituted by an enterprising amusement park manager. Inexpensive pottery, comprising



such articles as plates, cups, and the like, are arranged on shelves. The game consists of smashing as many articles as possible by throwing hard balls at them. The more pottery the player smashes the greater the prize.

The Sacramento, Cal., Stoneware Co.'s plant is being brought to a high state of efficiency. New additions are being built, and a lot of machinery is being installed, which will cut down labor costs and improve the quality of the output. The factory is now in a position to turn out anything in the stoneware line. A side-line which may be developed shortly is a deposit of mineral paint material found recently in its clay banks. The operation of the plant for the last year has been in the hands of Chris D. Marks.



THE OTIS

Tubular Feed Water
Heater, Oil Separator
and Purifier

is not an experiment but a tried and trusted appliance that the makers are not afraid to

GUARANTEE

To heat the feed water to the boiling point (210 to 212 degrees) with the exhaust steam without causing any back pressure, also to extract the oil from the exhaust, so that the exhaust steam after being passed through the heater can be used for other heating purposes, and the water of condensation for the heating system be returned to the boiler without the additional expense of an eliminator.

We are so sure of the OTIS that we agree to pay all cost of a trial—freight, cartage, piping, etc.—if it fails to do all we claim for it.

Catalogue and Prices at Your Service

The Stewart Heater Company,

33 EAST DELEVAN AVENUE · BUFFALO, N. Y.

Trade Review

Chicago.

With all the common brick yards running full and delivering from the kilns, the spring trade presents a very satisfactory face to the men who make it their business to keep Chicago supplied with its backing up brick. This condition has prevailed ever since the building season opened in earnest, which was about April 1st, and since then, while there has been no shortage, the demand has been brisk and seems to evenly balance the supply. The lack of speculative building is offset by the large amount of public and parochial work and until the large improvements now under way are completed, no change will be apt to affect the situation. Hollow tile continues to hold its own against all other forms of fireproofing, excepting on small partition work, where gypsum forms are gaining ground. Prices are firm and the outlook good. From the face brick dealers, however, the story is not so jubilant. Prices are far from good and the amount of work planned is far from satisfactory in volume. Opinions differ as to the cause, but the very strong probability is that builders do not see enough in the game to warrant their paying the high premium rates that are asked for building money. Local fire brick trade is excellent, prices fair and supply satisfactory.

New York.

Common brick was in such light demand here during the first half of the month and the barge supply at docks was so heavy that almost unprecedented means were adopted to move some so as to enable manufacturers up the Hudson river to obtain enough bottoms to load some of their present shed stock.

Some of the older brick men in the district had to strain their memories to recall when a reduction in the wholesale market price of Hudson river common brick was made for less than a shilling, yet in certain instances during the last ten days a cut of five cents a thousand has been made in isolated cases where manufacturers have been obliged to get barges at any cost. The result was that buying has been stimulated to some extent, although there has been no change in the consuming market.

There are approximately 26,250,000 common brick still unsold in the wholesale docks and dealers here are loaded heavily, but on barges awaiting unloading instead of in yard stacks. There are approximately 200,000,000 brick left over from last season in manufacturers' sheds to be disposed of between now and the middle of June when the first of the 1913 bake will be coming into the market, yet prices are steadily maintained in the general market at \$7 to \$7.25, although the top price has developed some weakness during the last week.

Barge arrivals from the North river manufacturing district in the first week in May were 48 as against 50 sales with 72 barges left over from the last week in April. In the corresponding week last year the arrivals were 43, with sales 71 and 67 left over. Prices this year were \$7 to \$7.25, while last year the quotations were \$6.50 to \$6.75 for Hudsons. Arrivals last week were 27, as against 57 sales with 70 left over while the transactions in the corresponding week last year were 57 arrivals and 76 sales with 39 left over. Prices were \$7 to \$7.25 (weak) as against \$6.50 to \$6.75 (firming).

Brick layers are well employed, despite the fact that new building construction is about half of what it was last year



Gears

For

Brick and Clay Working Machinery

The severe conditions imposed upon machinery in the Brick and Clay Working Industry demand that gears be specially designed and cut from material that will give

Long Life

and

Reliable Operation

A thorough study has been made of the operating conditions to be met in the Brick and Clay Working Industry—and a correct gear to meet your most severe requirements can be supplied.

Let us know your requirements

Nuttall : Pittsburgh

The largest gear works in the world

Williams Wet Clay Grinder

This is the **ONLY** machine that will **GRIND** clay and shale direct from the bank at **ALL** times **WITHOUT CHOKING UP**.

The K & K Co. Says:

"Our Williams Crusher is doing the work of TWO 9 ft. Dry Pans, is making the material finer, and is making far better and stronger brick."

This is the Machine



Read the Letter In Full:

THE K. & K. BRICK COMPANY.

(Incorporated)

670 Pacific Electric Bldg.

Los Angeles, Cal.

April 29, 1913.

Williams Patent Crusher & Pulverizer Co.,

Monadnock Bldg.,

San Francisco, Cal.

Gentlemen: In December, last, we started to set up one of your No. 6 Williams Crushers for grinding shale and hard shale rock at our plant, and we have been running it continuously and very successfully for the last ninety days, crushing not only the shale, but the hard shale rock, which we formerly had to cart out on the dump.

The Crusher is now doing the work of two 9 ft. dry pans, is making the material finer, and is making us far better and stronger brick than we ever had before.

To say the least, we are highly pleased with the results.

Our No. 6 Crusher, as per instructions from the factory was set up with a 100 H. P. motor; this, however, will have to be changed, and we have ordered a specially built motor from the Westinghouse Co., of Pittsburgh, of 150 H. P. In order that the crusher may take any load or quantity that is dumped into it, and get away with it, and to increase the capacity still further. When this motor is installed, and after the first month's trial, we will furnish you with the exact cost figure of grinding the shale per thousand brick. It will probably be ninety days before we can give you all of the data that you would like to have for your information.

Very respectfully yours,

THE K. & K. BRICK CO.

C. J. Kubach, President.

Williams Patent Crusher & Pulverizer Co.

Factory: St. Louis, Mo. 2701 No. Broadway

CHICAGO OFFICE: Old Colony Bldg.

SAN FRANCISCO OFFICE: 347 Monadnock Bldg.

at this time here in the district. The total percentage given at the headquarters of the union this week was about 55 per cent employed, which is considered good in view of the fact that with this trade, even in boom years, 70 per cent employed is considered exceptional.

Front brick interests report a market encouraging as to tone, but a little less rigid so far as current demand is concerned. The distributing agents have felt the effect of the 50 per cent falling off in local building operations this year, but they refuse to be pessimistic regarding the outlook.

Of the twelve distributing houses in this city visited this week, the consensus of opinion was that just so long as the administration holds the whip hand over politicians and big business interests at Washington, and so gets the tariff bugaboo out of the way early, there will be no crack in the business crust that could possibly portend a financial fissure. As far as the effect of the proposed reduction in the impost on face brick is concerned, the order producers are inclined to look philosophically upon the future and cross bridges only as they come to them.

This disposition is shown in the optimistic way the brick men look at the possible freight increase, due to the granting of advances to railroad employees. Many are inclined to doubt the ability of the carrying companies to "put the raise across," while others say that the roads know that any increase will simply mean the shutting out of Ohio brick, and so doing themselves out of a very profitable haul.

Pittsburgh, Pa.

Slight labor difficulties have been encountered by some of the face brick plants in the Kittanning district, the companies involved being those at Cowanshannoc, Templeton and at Kittanning station. The men asked a ten per cent increase in the wage scale and the outcome is not, as yet, a public matter. The Western Pennsylvania district is suffering from an incipient common brick famine and this extends into West Virginia, where Parkersburg contractors cannot start new work on account of the common brick shortage, no brick being in stock and nearby plants declining to take on any but local business.

Paving brick plants in the Zanesville, Ohio, district are running to full capacity, partly for street paving contracts in Newark, Ohio, where over two million pavers will be used in municipal work. The contracts, amounting to more than \$100,000 were awarded to the T. B. Townsend Co., of Zanesville, and the work is being done under the rules of the Standard Specifications for Street Paving.

If the condition of the fire brick business is any sign of the general condition of business, then trade is excellent, as the manufacturers are exceptionally busy, orders now on their books—not counting any business that is anticipated—being sufficient to keep all plants in full operation for many months. It is the prevailing opinion that prices for fire bricks are a little higher than quotations made in 1912 and the demand is greater than at any time during that year. In the Connellsville and Uniontown coal and coke regions, hundreds of new ovens are being erected, and as many more are contemplated, to say nothing of the constant rebuilding of coke ovens.

Indications are at this writing that the demand for fire brick in the coke regions of Western Pennsylvania and West Virginia will surpass all previous records.

Minneapolis and St. Paul

While the number of brick dwellings in the Twin Cities does not seem to increase perceptibly, there are indications

that more brick has been used in the construction of residences, so far this year, than was used in any season for several years past. Brick is also gaining in the business district, replacing stone and terra-cotta and paving brick is growing in favor for facing purposes.

As regards hollow tile, the market seems to be fair, particularly in the outlying districts and suburbs. Prices on all clay products have been holding up very well, due no doubt to the elimination of a disastrous competition that began a year or more ago and ended in the eventual failure of the concern that was particularly prominent in the price-cutting contest.

Reports from several brick manufacturers in Minnesota, Iowa and Wisconsin show that the plants, as well as the retailers, are having a good trade. The continued demand from the great northwest is one of the secrets of the gradual increase in demand and then there is also the fact that last year's good crops and the disposition of farmers to use brick in their farm buildings is creating a local market for the yards that did not exist in former years. One company states that they are nearly all sold out at their yard and are carrying less than one quarter of the stock usually on hand at this time of year.

In the paving field St. Paul has been conspicuous lately on account of the struggle in that city over a brick specification. The city is now doing its own paving work and friends of the old system are busy in opposition. One of the latest developments occurred at a recent meeting of the Board of Public Works. Mayor Keller issued a formal statement in which he defended the Board and declared that a certain member was doing everything in his power to hinder the administration in its efforts to give the people better and cheaper paving. Brick, he declared, was a standard paving material approved by the Association of Commerce of St. Paul, and he showed that the attitude of the critics of the Board in regard to paving Snelling avenue with brick was inconsistent and uncalled for. In regard to kinds of paving, the Mayor said:

"During the past year we have given a great deal of study to various types for use here under varying conditions. We determined on the following: Creosoted blocks for level streets, and sandstone for steep grades, where the traffic is heavy and the property can bear the expense; asphaltic concrete or sheet asphalt for residence or semi-business streets, unless there are car tracks; brick on residence or semi-business streets with car tracks."

E. R. Dutton, assistant city engineer, Minneapolis, has called the attention of the citizens to the fact that brick has been used in the paving material for a great many years, and meantime the quality of brick has vastly improved so that today it is considered one of the best, if not the best, paving material. Minneapolis has about 27 miles of brick paving, the first of which was laid in 1896 at a cost of \$1.89 per square yard. One of the principal streets was paved with brick in 1898, with sand filling and shows very little wear.

Asa Paine sees a marked improvement in the brick outlook and for hollow tile as a building material in connection with steel. He says that contractors have never before talked so favorably of the hollow brick or hollow tile and steel combination. Mr. Paine views the price situation optimistically and states that there will be an advance of from 50 to 75 cents.

Frank P. Martin has removed his offices from 14 S. Broad street to Rooms 724 and 725 Stephen Girard building, on 12th street, Philadelphia.



Williams Wet Clay Grinder

This is the **ONLY** machine that will **GRIND** clay and shale direct from the bank at **ALL** times **WITHOUT CHOKING UP.**

We Prove Our Claims

We do not make idle statements. All our claims for the Williams Crusher are based on what experience has taught us to be absolutely true.

This is the Machine



None Other Made Like It

From time to time we publish letters like that printed on the opposite page to remind you that what we say in these pages is not the visionary raving of an irresponsible advertising writer.

Facts count in this day of progress and achievement.

If we say the Williams will grind clay and shale direct from the bank without choking up, we prove the statement by printing bona fide letters from users.

If we say it will do the work of two dry pans and do it better we print the proof.

There are few conditions the Williams' Crusher cannot handle. It will work 'most any clay or shale that will make brick. We court your invitation to prove this.

Catalogue No. 18, with list of users, endorsements and full description, will be sent you on request.

Williams Patent Crusher & Pulverizer Co.

Factory: **St. Louis, Mo. 2701 N. Broadway**

CHICAGO OFFICE: Old Colony Bldg.

SAN FRANCISCO OFFICE: 347 Monadnock Bldg.

Are You a Member of The National Paving Brick Manufacturers Association ?

If not, your best interests demand an early affiliation with us. Write for our literature at once, and learn the amount of good we can do you.

WILL P. BLAIR, Secretary
National Paving Brick
Manufacturers Association

Locomotive Engineers' Bldg.
CLEVELAND, OHIO

The News in Brief

N. Clark & Sons are planning an additional building, 50 by 100 ft., in connection with their pottery plant at Alameda, Cal.

A. M. Lutes, of Oklahoma City, Okla., has purchased the brick plant at Gaither, Okla. He will overhaul the plant and soon begin the manufacture of brick.

The new San Diego Vitrified Brick & Clay Products Co. has taken offices in the Spreckels building at San Diego, and started work on the construction of its plant at National City, a few miles from San Diego.

Dressler Tunnel Ovens, Ltd., have moved their offices from Hayes End S. O., Middlesex, Eng., to Cremorne Wharf, 27 Lots Road, Chelsea, London, S. W., to which address all communications should be sent.

The brick work is almost completed on the new buildings of the five story plant for the Clearfield Sewer Pipe Co., which is erecting its new works at Clearfield, Pa., at a cost of about \$150,000. It is possible this new plant will be placed in operation within a few months.

Extensive improvements are being made to the Barnum (Minn.) Clay Products Co.'s plant, where a force of men is now at work rebuilding kilns and repairing engines and boilers. Building and hollow brick, drain and roof-tile would be the principal products of the yard when it starts up for the season.

The Diehl Brick & Tile Co., of Defiance, Ohio, sustained so much damage through the recent floods that their plant will have to be almost entirely rebuilt. G. M. Small, manager and part owner of the Diehl plant, visited a factory at Seneca, Kas., recently, to investigate a Klose kiln which is in operation there, he having in mind the installation of this type at Defiance.

Indianapolis, Ind.

New building records were established for the four months ending April 30, when building operations reached a total of \$3,070,403 as compared with \$2,116,005 for the corresponding period of last year. During the first four months of this year brick construction reached \$328,272 and fireproof construction \$904,000. For the same period of 1912, brick construction reached \$293,940 and fireproof construction \$501,780.

The brick trade in Indiana since May 1 has not been up expectations. This is attributed to the fact that in many sections of the state building has been retarded by the recent flood and to the new wage scale that became effective May 1. This scale provides eighty cents an hour for bricklayers and forty cents an hour for hod-carriers.

The increased cost of labor, caused by the adoption of the highest wage scale in the history of the state, is discouraging many persons from using brick construction. Brick plants in the state are running full time and a good price schedule is being maintained, the great volume of shipments going west and east.

There is an excellent business in drain tile, because of the vast amount of sewer construction under way throughout the middle west. Tile prices are much better and steadier than they were a year ago.

Free Service Bureau

"Brick and Clay Record" receives many requests daily for information from its readers. Some correspondents want to solve difficult problems in the kiln or other parts of the plant. Others want to buy machinery, tools, equipment, supplies or materials and ask us to recommend what is best suited for the purpose and to give them advice and suggestions.

Many Thousands Ask Questions

During the course of a year many thousand readers rely on "Brick and Clay Record" to answer all sorts of questions.

The demands made on the editorial and business departments of the magazine have become so great that it has been found necessary to create a special department to take care of the numerous inquiries.

This new department is called "Brick and Clay Record's Service Bureau." It is in charge of a competent executive who has a special staff of assistants. Expert engineers, superintendents, kiln men and others are at the call of this Bureau and there is no subject or problem in the clay plant that cannot be treated.

What We Do

Immediately upon receipt of a communication asking where the writer can obtain a certain tool, machine, equipment, materials, supplies or any article that is not advertised in our magazine, we write to manufacturers or sellers whom we know to be reliable and can furnish goods promptly.

Letters are sent out the same day the request is received and the best possible information is given in every case.

How We Do It

Should a reader want us to solve some knotty tangle in the tempering or mixture of clay, in its handling or manufacture, or in its burning, we turn his inquiry over to one of the practical experts who can best answer the question, secure the solution and forward it to the subscriber.

It is estimated that "Brick and Clay Record" has given free information in this way to hundreds of readers every year.

Why We Do It

Some friends ask us why we go to all this trouble and yet not make any charge for it.

"Brick and Clay Record" readers depend on this publication for information and it is our purpose to see that their wants are supplied. We feel it is not enough for us to print a good magazine and do it twice a month at a nominal charge. Our promise to do anything to enlighten the clay worker goes beyond that.

Do Not Hesitate to Ask for Any Information Wanted

Expense is not considered and the most painstaking care and attention is given to any request sent to our Service Bureau. We most cordially invite our readers to make full use of it at any and all times.

If you want to get expert service on any problem of burning, manufacturing, engineering, or if you want information about work that you do not understand, state such particulars as will help us to give you an intelligent answer to your questions.

If you want to buy anything, or if you want more information about something that is not advertised in "Brick and Clay Record," or if you want to know more about something that is advertised, fill out the coupon below. We will place you in touch with manufacturers or dealers who will furnish you with just what you want and at the best prices.

USE THE COUPON IN WRITING

Brick and Clay Record,
Service Bureau,
447 Plymouth Court, Chicago, Ill.

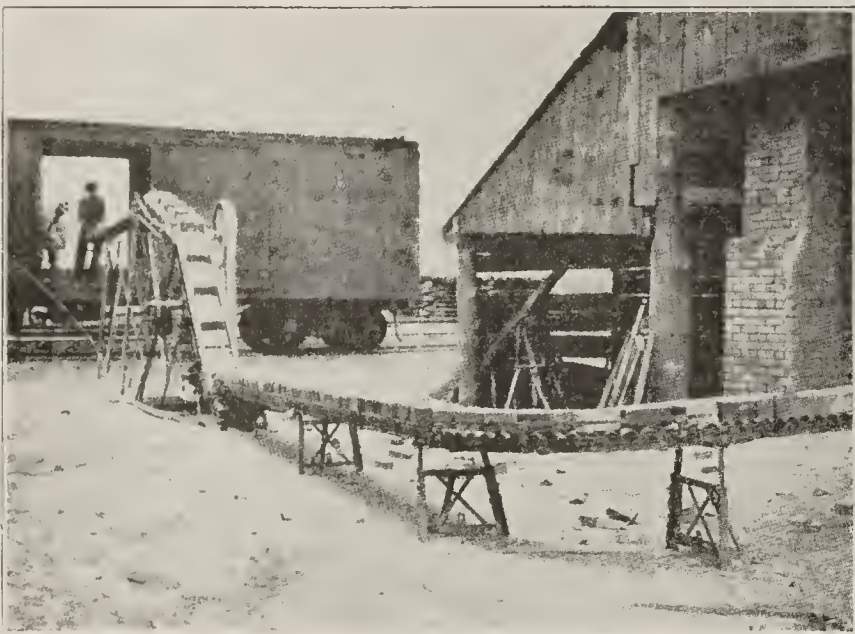
Gentlemen: We want some information about the items below in front of which we have placed a cross. Please put us in touch with concerns whom you know to be reliable.

- | | | | |
|---------------------------------|----------------------------------|---|---------------------------------|
| (....) Analysis of Clay. | (....) Clay Gatherers. | (....) Hollow Block Ma- | (....) Screens. |
| (....) Barrows and Trucks. | (....) Crushers and Pulverizers. | (....) Machinery. | (....) Sewer-Pipe Machinery. |
| (....) Belting. | (....) Cutters. | (....) Kilns, Kiln doors, frames, lugs and bands. | (....) Shovels (Steam or Hand). |
| (....) Blowers. | (....) Disintegrators. | (....) Molds or Mold Sanders. | (....) Trucks (Motor). |
| (....) Boilers and Engines. | (....) Dryers. | (....) Oil Burners. | (....) Tile Machinery. |
| (....) Brick Machinery. | (....) Dry or Wet Pans. | (....) Pallets and Trays. | (....) Tramways (Aerial). |
| (....) Cables and Cableways. | (....) Elevators and Conveyors. | (....) Pyrometers. | (....) Wagons. |
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| (....) Clay Feeders and Mixers. | (....) Full Equipment. | | |
| | (....) Gears and Castings. | | |

(Signed) (Address)

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Save money by spending some



You had an awful time last year

trying to deliver your brick on time. The strong demand, rush orders, scarcity of labor, shortage of cars and bad weather are some of the troubles you were up against last year.

If you have the will, we have the way—

to put more good nature into your system and more profit into your business than you have ever had before, by doing away with *all* your troubles and *half* your handling expense.

Over a hundred brick manufacturers

have written us their experience after using the Mathews Gravity Brick Conveyor for loading brick direct from kilns into cars. Not one of them would go back to the use of wheelbarrows for this work.

You

are losing money every moment you continue to put off buying a system of conveyers. Don't wait until the rush comes, as it will then be too late to make prompt deliveries. Ask for our catalog and prices *now*.

Branch Factories:
TORONTO, ONT.
LONDON, ENG.

Main Office and Factory,
ELLWOOD CITY



Items of Interest

The property of the Cumberland Clay Co., Carlisle, Pa., will be sold at public sale to satisfy a mortgage of \$75,000 held by the Farmers' Trust Co., of Carlisle.

Because their supply of clay has "run out" operations have been suspended at the plant of the E. E. Flurie Brick Co., at Newport Pa.

Building brick will be made a feature by the Raleigh Realty & Construction Co., which will erect a new brick plant at Beckley, W. Va. It is understood that the order for the machinery has not been placed.

The Board of Control, of Niles, O., has selected Bokhara or Tapestry brick for use in the construction of a new fire department building, and gave the order to the Eaton Builders' Supply Co., of that place.

F. Vernon Aler, of Martinsburg, W. Va., has had plans drawn for the erection of a brick plant near that place. Property has been acquired, and the construction will be started at an early date.

The Hieatt Brick Co., of San Diego, Cal., has completed arrangements with the city of San Diego for the development of a large shale bed owned by the city. The company will put in excavating equipment on the city land to obtain material for its plant.

A mortgage for \$200,000 against the Patton Clay Manufacturing Co., was filed in the county courts at Ebensburg, Pa., recently, in favor of John L. Gilliland, of Clearfield, Pa. This has resulted in a decision of the company to increase its debt from \$150,000 to \$200,000 and to issue bonds payable in 1934 to wipe out this obligation. It is said that this new money will be used to greatly enlarge and improve the plant and business of this company.

A new shaft is being sunk at Massillon, Ohio, on the property of the Everhard Company, it being thought that fire-clay of good quality will be found below the sand rock and shale that now lies around and under the kilns. If the work proves successful it will give this company a clay deposit adjacent to its plant and save the bringing in of clay—an item of considerable expense at the present time.

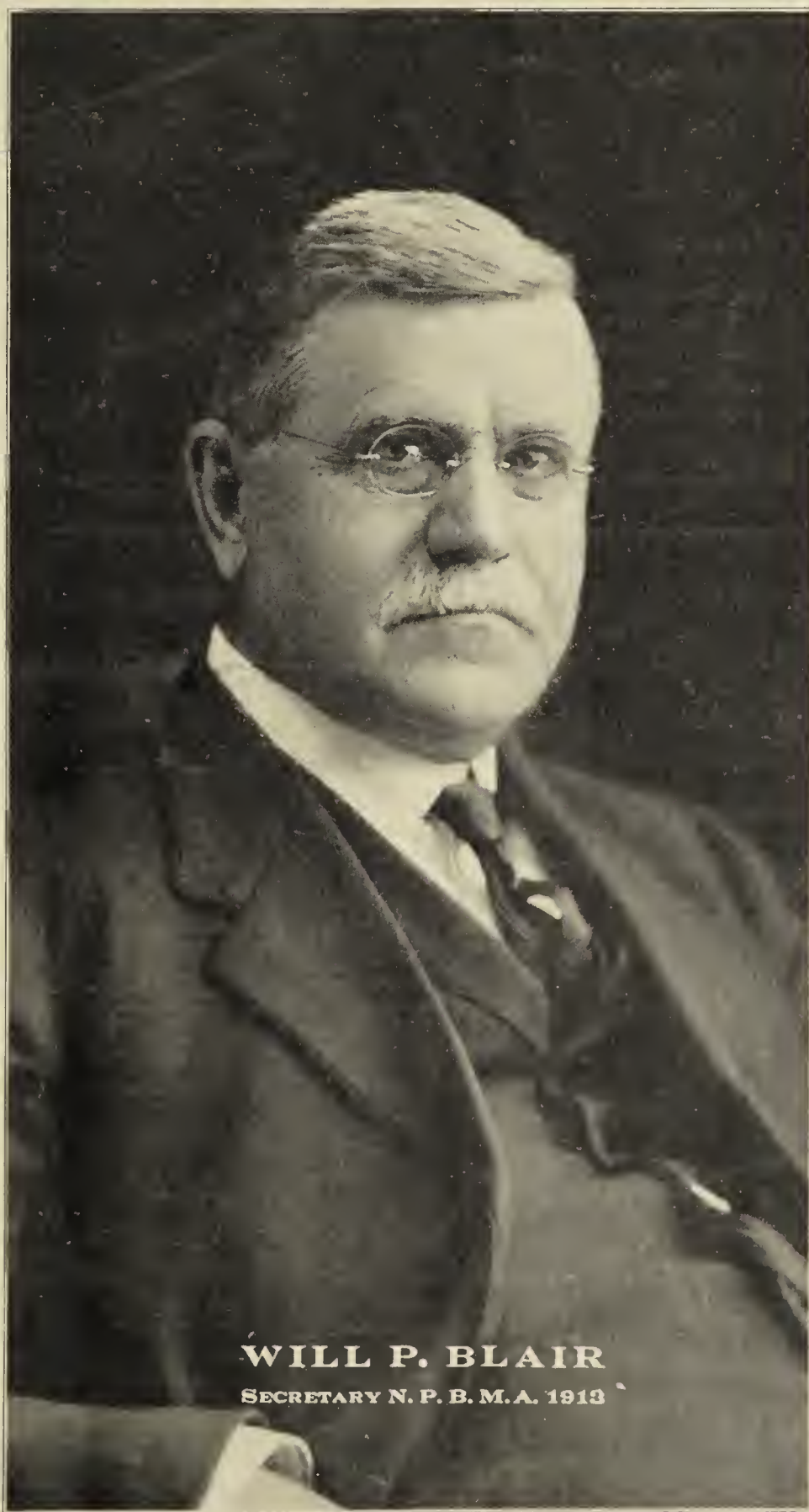
Wheeling, W. Va.

Recent reports indicate that all the fire brick and paving brick plants in the north eastern part of the state are working to capacity, and especially is this true of the plants located at Zalia and New Cumberland, in Hancock county, this state. At Globe and Kenilworth, all the paving brick plants have been working throughout the winter, and the orders now on file insure an active summer season.

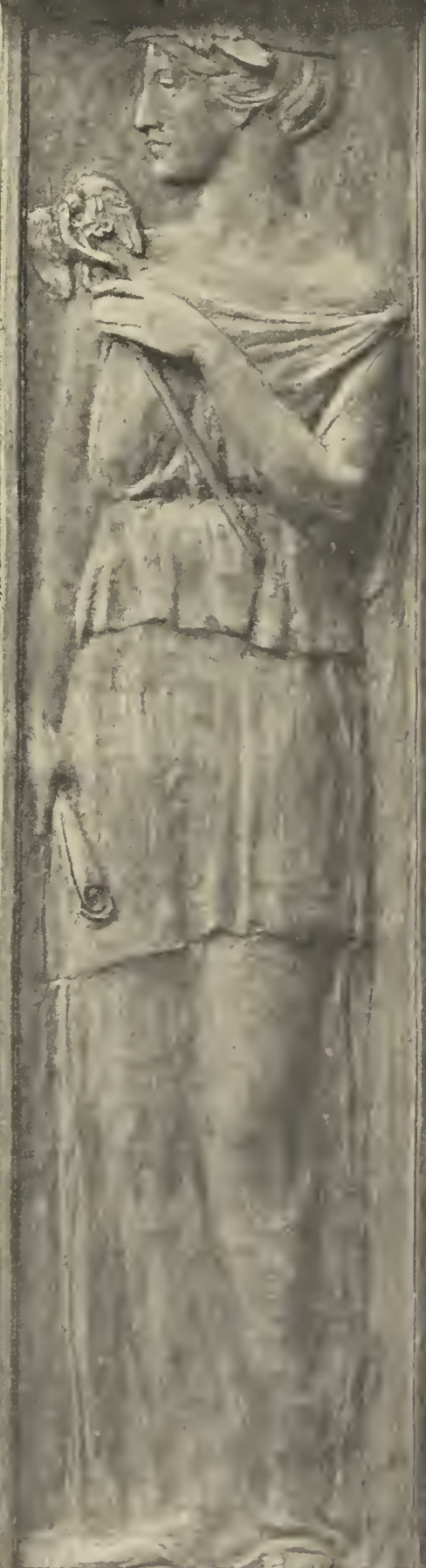
All of these plants stopped shipping late last winter with many unfilled orders on their books, and ample stocks are now in the yards for the starting of early shipments.

AFTER THE FLOOD—WHAT? WILL WATER-WASHED OHIO BUILD WITH BRICK?

BRICK *and* CLAY RECORD



WILL P. BLAIR
SECRETARY N. P. B. M. A. 1913



Classified Ads Pages 1029-1034

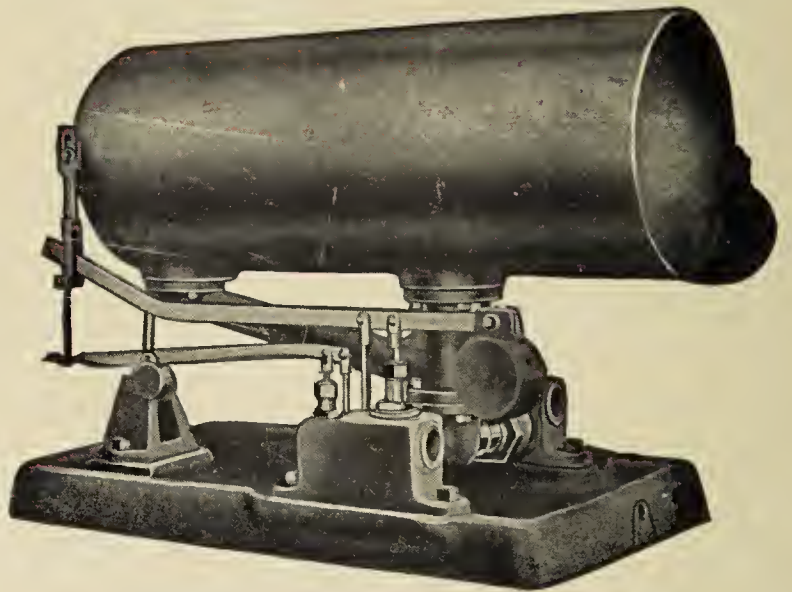
CHICAGO, JUNE 1, 1913

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BRICK

and CLAY RECORD

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CHICAGO, JUNE 1, 1913

Number 11

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Good Roads' Most Ardent Advocate

Will P. Blair

Secretary National Paving Brick Manufacturers' Association



MONUMENTS usually are erected as attribute to some one who has lived his life and to proclaim to posterity the good deeds and achievements of the person so honored. Will P. Blair, however, being an exceptional man, has his erected while he may see and enjoy the same. But this is not the only distinction Mr. Blair has. He has not one monument nor a dozen, but hundreds and probably more to his credit than any of the world's celebrities—living or dead.

These monuments are the miles and miles of perfect brick pavements which have been built in accordance with his specifications and with material that is gauged by the high standard which he has set.

Mr. Blair, as most clayworkers know, is the father of the paving brick industry as it is known today. As secretary of the National Paving Brick Association since its organization nine years ago he has been the most active agent in the field and to his energy and devotion to his work is due much of the great progress in the paving brick industry.

Mr. Blair once was a manufacturer of paving block himself and to his credit it may be said that he was a manufacturer of good paving block, too. As a manufacturer he maintained that the brickmaker should make the best brick possible and that these brick should be laid under the best conditions. And he practiced what he preached, as the streets of Terre Haute, Ind., today attest, for Terre Haute was the home of his plant and the streets that were laid more than a score of years ago under his direction and in accordance with his specifications are pointed at today as proof of the durability of brick by salesmen when they find need for argument.

Mr. Blair early interested other manufacturers in his ideas and finally got a number of those located in the Middle West to meet at Cincinnati to form an organization for the purpose of crystalizing these ideas into a concrete form. It was on April 27, 1905, this first meeting was held. His co-laborers honored him by making him chairman of the meeting.

A committee, acting under Mr. Blair's direction, drew up the first by-laws and specifications of the association and it is interesting to know that these remained practically unchanged until 1910, forming the foundation upon which is built the present prosperity of the N. P. B. M. A.

Within a year a permanent organization had been formed and offices opened in Terre Haute, Mr. Blair having been induced to devote much of his time and energies to the general good of paving brick. It was soon made apparent to the manufacturers that the organization was just what was needed to put new life into the industry, and Mr. Blair having proved his exceptional qualifications for the work was induced to give up his plant and devote all his time to the association. It was in 1906 that the manufacturing was turned over to his successors and he accepted the post of secretary of the new association. The early days of his work found a lack of funds, a lack of support on the part of manufacturers, a stubborn resentment among city engineers and other officials who had their own theories—each differing from the other, and many other difficulties.

A long campaign of education, including personal demonstrations and arguments, until from the chaos that was, came the perfect organization of today, one that has induced fifty or more engineering schools to adopt its specifications so that a generation of street paving engineers will come into being, the ground work of their knowledge being uniform excellence.

In days to come, when Mr. Blair's dreams come true and American roads are the best in the world, Mr. Blair will need no other monument to preserve to posterity what he has achieved—his monument is and will be the road that is durable, sanitary and economical.

Brick Men Face Fines

Twenty-five Leading Manufacturers of Hudson River District Arraigned for Violating Trust Laws

By Allen E. Beals

Staff Correspondent



Allen E. Beals.

The penalty of being revolutionary in the manufacture, selling and distribution of common brick in the East hangs over the officers and directors of the Greater New York Brick Co., the new selling organization in New York which represents approximately 70 per cent of all the brickmakers in the Hudson river district who supply the New York market with this building commodity.

Because these manufacturers took steps to insure for themselves an adequate return upon their investment in the face of higher cost of production, greater and constantly increasing shortage of labor, higher cost of fuel, the necessity of buying tempering material instead of finding it on the over-lay as they did years ago and to offset the higher cost of transporting barges of brick between the manufacturing district and the consuming market, twenty-five of the leading brick manufacturers face a possible fine and term of imprisonment for violating the Donnelly anti-monopoly law of New York state.

Wednesday evening, May 21, there appeared before Magistrate John J. Freschi, presiding in the West Side police court of New York City, President John B. Rose, and directors of the Greater New York Brick Co., for arraignment on the charge of combining to form a monopoly of the common brick market in this district. President Rose, of Roseton; Robert Main and George W. Washburn, of Saugerties, N. Y.; Alva S. Staples, Harry B. Brigham, Frederick P. Luther, David Terry and George Hutton, of Kingston; Everett Fowler, Denton Fowler, Jr., John P. Shankey, John E. Lynch and William Manley, of

Haverstraw; William N. Cary, of Mechanicsville; William A. Nicholson and Aaron E. Aldridge, of Fishkill Landing; George S. Allison and Lucien H. Washburn of Stony Point; Percival Goldkin and William W. Rider of Catskill; Matthew Hayden, of New Windsor; Hiram Merritt, of Newburgh; Clarence L. Bleakley, of Verplank, and Conrad F. Suderley, of Coeymans. The twenty-fifth defendant, Alonzo Rose, died since the ex parte proceedings opened. All these names represent the oldest and largest plants in the Hudson river district and all are honored in their private and business lives.

This case has attracted the attention of brick manufacturing interests in all parts of the country because it ultimately will establish whether these manufacturers of brick have the right to organize and safeguard their interests against the organization of building material dealers and supply men which, prior to the organization of the defendant company, had it in its power to dictate the prices at which brick were purchased in the New York market by means of a circular price list sent out from its offices at 18 Broadway, New York, stating the "official" price for brick and other building material supplies which, in the case of common brick, at least, gave no range and which solitary price was presumed to be accepted by buyers at the wholesale brick dock as "list" and which usually corresponded to the lowest price quoted in the official range as published weekly elsewhere and quoted on the Building Material Exchange.

For years prior to June, 1911, when the Greater New York Brick Co. was organized, the brick manufacturers of the Hudson river district as a general rule were unable to clear the average season with anything like a healthy margin. Frequently the net profits would not be more than 4 per cent on their investment, whereas almost any other business man would expect from 12 to 17 per cent, and in many more cases they would come through at an actual loss, especially if the market had been weak for any length of time. The organization of



JOHN B. ROSE,
President of the Greater New York Brick Co.

the Greater New York Brick Co. came at a time when it was either necessary to obtain an adequate price for common brick in this market, lessen the cost of production or close up some of the plants and supply the market from a few concentrated organizations. The last plan was entirely impractical because no one would consent to shutting down his plant unless it was made attractive enough as a proposition for him to retire from the field.

Obviously the only thing to do was to cut down the cost of production and to reduce selling costs and put the price on a basis which would at least bring in a sufficient revenue. So the Greater New York Brick Co. was organized with State Senator John B. Rose as president; Aaron E. Aldrich, vice-president; Frank DeNoyelles, secretary, and Robert Main, treasurer, with offices at 103 Park avenue.

The company began with a capitalization, practically two-thirds paid in, of \$100,000, with an annual output of approximately 800,000,000 brick of a standard quality, out of a normal district output of 1,000,000,000 for the district.

Soon after it began to do business, July 1, 1911, about eighty contracting mason builders of New York city laid before the then attorney general of the state, Thomas N. Carmody, at Albany, a complaint charging that the Greater New York Brick Co. was a combination in restraint of trade and asking him to proceed against the company under the Donnelly anti-monopoly law.

The attorney general, after holding several hearings, said that the petitioners had not presented any evidence before him of sufficient value to sustain their claim, and that he would have nothing to do with the case, as it was not his province to hunt up evidence.

The complainants felt that a change of venue was desirable to the success of their case and so the matter was withdrawn and on January 27, 1912, a complaint was made by Francis M. Weeks, President of the D. C. Weeks Company, of New York, building contractors, who submitted a written statement to Assistant District Attorney William A. DeFord alleging that a combination in restraint of trade in the brick market was operating

in that city and insisted upon criminal action being entertained by the District Attorney's office.

The District Attorney refused to entertain the first statement which was delivered to Mr. DeFord by John DeWitt Warner, of the firm of Warner, Wells & Korb, in which the following complaint was made:

"First, That the manufacturers of brick named in the complaint constitute nearly all the manufacturers of brick used in building and that the brick are manufactured at various places along the Hudson river.

"Second, That the manufacturers named in the complaint have and have had for some time past control of at least 90 per cent of the supply of Hudson River brick available.

"Third, That the manufacturers named in the complaint have caused to be organized in this city a corporation named the Greater New York Brick Company, and conspired to sell brick in this city at uniform price.

"Fourth, That the above-named company was organized on June 19 last and on the 15th of November it advanced the price of brick 25 cents per thousand above the price of the month before."

The Greater New York Brick Company, previously, in a statement from its counsel, Mr. Patterson, defined the object of the Greater New York Brick Company to be as follows:

"The movement, which has been underway for some time and has resulted in the formation of the company known as the 'Greater New York Brick Company,' need not disturb or cause the apprehension of any of the building interests, whether they be dealers in building materials or consumers of the same.

"The Greater New York Brick Company is a corporation formed for the purpose of economical handling and disposal of the product of the various Hudson river brick manufacturers. Under practices heretofore obtaining, there has been no stability in the market for North river brick and the manufacturers have under the conditions which have ordinarily prevailed, realized that the business was being conducted in a most extravagant and expensive, not to say, disastrous manner.

"The object of the new company will be to standardize the methods of marketing their product. It will be possible under the management of a well organized company to practice many economies, beneficial, not only to the manufacturer, but to the dealer and consumer as well.

"It is the aim of this company to methodize the conduct of the business and give more stability and uniformity to prices."

Hearings have been held frequently before Magistrate Freschi and more than fifty witnesses have been examined in ex parte proceedings by Assistant District Attorney Ellison, who succeeded Mr. DeFord in this matter. During the last eight weeks Magistrate Freschi has been ill and for that reason the decision in the former proceedings was delayed.

During the conduct of the investigation the market has been seriously manipulated in favor of so called "foreign brick," brick that comes from New Jersey and Connecticut with the result that prices for this kind of building material have been higher than they have been at any time in recent history of the market and at the same time Hudson River common brick has maintained a price level that has caused some complaint among consumers on the ground that the quotations were not based upon conditions of demand, but rather by some arbitrary dictum.

The Greater New York Brick Company, on the other hand, has maintained that the prices it quotes are based upon the higher cost of manufacture incidental to the higher wage scale ruling upon the yards, the scarcity of labor which makes overtime a larger item among their workmen than ever before, the higher cost of fuel, the necessity of purchasing tempering material which formerly was to be found on the overlay of the banks and because construction conditions in this market were such today that buying in season was largely from a hand to mouth order and therefore the demurrage and delay to barges here in the market was such as to compel the maintenance of a larger fleet. It holds that the prices it quotes are justified by new conditions as shown by the fact that the manufacturers came out whole last year for the first time in more than a decade.

The decision, upon which the arraignment of the officers was made, was handed down by Magistrate Freschi on May 16 and reads in part, as follows:

"On the law, as Mr. Warner (Counsel for the complainants) has pointed it out to me, the Greater New York Brick Co., incorporated as a selling agency or a commission agency, for the manufacture of the common North river brick, by the individuals who maintain and operate the plants in the Hudson river valley, is an unlawful combination in the restraint of trade. This matter came before me on an information charging the Greater New York Brick Co., its officers, directors and stockholders, with being a monopoly in restraint of trade, and more particularly charging a violation of the so-called Donnelly act, being that part of the General Business law, known as and by Section Nos. 340 and 341. Section 340 of the General Business Law of this state provides that, 'for every contract, agreement, arrangement or combination whereby a monopoly in the manufacture, production or sale in this state of any article or commodity of common use, is or may be created, established or maintained, or whereby competition in this state in the supply or price of any such article, or commodity is or may be restrained or prevented, or whereby for the purpose of creating, establishing or maintaining a monopoly within the state of manufacture, production or sale of any such article, or commodity, the free pursuit in this state of any lawful business, trade or occupation is, or may be restrained or prevented is hereby declared to be against public policy, illegal and void. Section 341 provides the penalty for the violation of section 340 of this law.'

"The complainant charges that the word 'arrangement' in the anti-monopoly act, supra, making every contract, agreement, arrangement or combination whereby a mo-

nopoly may be created or whereby competition may be restrained, unlawful, has had a broader meaning than either the words 'contract', 'agreement', or 'combination', and it may include each and all of these things and more, and means the disposition, of measures for the accomplishment of a purpose, and a structure or combination of things in a particular way for any purpose.

"I have come to the conclusion that there is probably cause to believe that there is a monopoly in restraint of trade in this case such as is forbidden by the statute just quoted. I am of the opinion that the monopoly or restraint of trade which has been forbidden includes not only that which is absolute, but every grade of tendency thereto by which any trade or industry or public or private interest is materially affected.

"I am satisfied that the evidence before me, as summed up, tends to show that the association in question was formed for the purpose of controlling the manufacture of brick, the production of brick and the price of brick, in the interest of its members and inasmuch as it seems to be, and there is probably cause to believe it to be, a combination to fix control, and regulate prices of brick, that it is such a combination or monopoly as violates the anti-trust laws and I therefore have come to the conclusion to issue a summons against the Greater New York Brick Co. and a warrant against its officers and directors.

"Now, there is no formal complaint except depositions by the various witnesses that were examined before me and I take it that that will serve the purpose of an information."

Speaking of the punishment that may be meted out to a violator of Section 340 of the General Business Laws of New York, which provides that contracts for monopoly are illegal and void the court said:

"If a natural person is convicted under this law he may be punished by a fine not exceeding \$5,000, or imprisonment for not longer than one year, or both; and if a corporation, by a fine not exceeding \$20,000. Now, the statute—Section 341, of the Business Law speaks of an indictment based on a violation of any of the provisions of this section, and it states that it must be found within two years. So I take it from that that I hold for the Grand Jury just as I would hold in a case of criminal libel. I cannot see any objections to that. The defendant would rather have it go to the Grand Jury in the first instance and I think I have a right to hold."

The case probably will be moved for a trial at the next hearing, Wednesday morning, June 11, in the Westchester court, New York, at 10:30 o'clock.

Hudson River Brickmakers Seek Protection

Another indication of the apparently approaching day when government or state supervision will extend to business enterprises was evidenced recently when the legislature at Albany, N. Y., had reported out of committee the compensation law and employers' liability amendments, which now seem to bear every prospect of being enacted into law at this session. It has been patent to brick manufacturers for some time that if such laws are put upon the statute books the manufacturers in the Hudson River district would be compelled to take some defensive measure to safeguard themselves against contingencies which might prove disastrous to any one of them.

This sentiment took definite shape recently, when Senator John B. Rose, president of the Greater New York Brick Co., called a meeting in Newburgh, N. Y., to consider the organization of a mutual insurance company to protect its subscribers against losses they might sustain in the operation of burdensome laws or the action of a commission, if one be appointed, with power to assess damages for injuries to employes. At the meeting it was decided to appoint a committee of five, F. P. Luther, of Kingston, H. J. Jova, of Newburgh, John Peck, of Haverstraw, and Clarence Blakely, of Yonkers, being named, they to wait upon a fifth and announce his name later.



Brick-paved street after the flood in Dayton. Negro soldiers are seen carrying away the debris. While asphalt and cement streets were washed away, brick was unharmed.

After the Floods—What?

THE LESSON THAT OHIO'S RECENT
DISASTER TEACHES—BUILD OF BRICK

By Georgia Hopley

"O'er Flood and Flame C-L-A-Y rules sublime!
Defying frost and even time.
It has no 'if's' or concrete fears;
It lasts supreme through all the years."

Now that the waters of the March floods have receded and the scene of state-wide devastation confronts the people, what is to be read in the handwriting on the wall? BRICK. This is the message to Garcia today—BRICK! This is one of the important lessons to be learned from the appalling, heart-rending, pathetic expanse of waste which extends from end to end of the Buckeye state and beyond the borders of the state in many cases.

The extent of the wreckage can be better understood when it is known that it is estimated that in Columbus alone it will take a force of five hundred workmen all summer to clear away the debris.

What is the nature of this wreckage? Not brick. Among the thousands of photographs I have picked up from day to day since the beginning of the flood March 25, I have yet to see one showing a brick dwelling, however small, swept away or off its foundation through the ravages of the flood. Brick structures have suffered more or less from the heavy impact of articles swept away by the mighty current, and when we hear of a three-ton safe being carried a mile, of one farmer four miles south of Columbus reporting a find of five pianos on his pasture lot, of an interurban car swept two miles from its tracks, and similar incidents of the flood, it is not to be wondered that anything which came in contact with these rapidly moving objects was certain to suffer.

The destruction of the frame structures, however, was wholesale, pathetic. Briefly: Out of 3,111 houses tabulated in the survey of the West side (the flood district) of Columbus, only 23 reported no damage in any way by the water or moving objects. There were 435 homes absolutely wrecked. In 432 homes the furniture was lost or destroyed. Of the houses standing 677 were vacant. In the houses canvassed there were 11,386 persons who, figured with the houses vacant and destroyed, showed that between 18,000 and 20,000 suffered losses in the flood.

One of the territories which suffered most seriously was Glenwood, where an entire settlement was practically swept away. Here there was a mammoth hole excavated by the swift current. To give an idea of the capacity and certain destruction lurking within this vast whirlpool it may be stated that work was still in progress in an effort to fill up the excavation after 3,000 sacks of cement and 800 barrels of sand had been deposited with practically no visible effect. Into this whirlpool frame structures were swept and in the swirl crushed like egg shells and the debris therefrom carried away—in some places piled up from ten to twenty feet. Some of the wrecked homes of Glenwood are shown in the accompanying illustrations. Incidentally there were no brick homes or other brick structures caught in this seething mass.

Everywhere may be seen frame houses in a more or less damaged condition. Sometimes half a dozen are in a heap, one on top of another, or a conglomerate mass of Gothic roofs, dormer windows, doors, verandas or



These two pictures prove two points—that asphalt will not stand the severe test that brick does as a street paving and that frame houses are as paper shells in a flood while brick stand unharmed. The picture at the left is what is left of South B. Street, Hamilton, Ohio. Note the slabs of asphalt. The picture at the right speaks for itself.

other adjuncts of a building. There are houses which have divided in the center, the upper and lower floors having been separated. Frame buildings, in hundreds of cases, have been swept from the foundation, or turned entirely around, without moving from the lot.

Before the debris was cleared from the main thoroughfares roadways and sidewalks were filled with houses and buildings of every kind and variety. Asphalt streets—the roadways—were riddled in a manner resembling the large floats of ice at the breaking up of winter, great sections filling the street for blocks.

"Dangers lurking in wood piles!" "A chain is only so strong as its weakest link!" Just so is a building. One weak spot in construction has wrought fearful ruin. Certainly the handwriting on the wall at this time spells B-R-I-C-K. The occasion is surely ripe for clay products. This is where these men come into their own. Man's extremity is their opportunity. This is the burden of this article at this time.

At the Fifth Annual Convention of the Building Brick

Association of America, held at Chicago March 5, Herbert N. Casson, the efficiency expert, of New York, in an address on "How to Sell Brick," sounds the keynote of the situation at the present time as follows:

"Now, gentlemen, you are the makers of clay brick. Perhaps you can do more than that. Perhaps you can breathe the breath of life into your brick. Why not? Wouldn't it be a fine thing if you had a set of emergency advertisements, and whenever a wooden city half burned down, come out the next morning and say 'REBUILD WITH BRICK'? Then you would be Johnny on the spot. Get ready for the fire before it happens, don't get there ten days late. Get there before the contracts are let, not later. The next morning be there with your advertisement 'REBUILD WITH BRICK,' so when the people come out to see the smoking ruins they see right above the ashes the great statement, 'REBUILD WITH BRICK.'"

If the destruction should come through flood instead of flame the idea still holds good—better, in fact, since



One of the most traveled streets in Dayton is shown above. The photograph was taken immediately after the flood had receded. The brick-paved thoroughfare was uninjured by the rush of waters while concrete and asphalt streets were washed out.



These pictures tell a powerful story of the flood, showing the strength of burned clay under the most severe conditions and the insecurity of lumber and cement.

there is an insurance against fire and one receives, if insured, at least some compensation.

The loss in Ohio through the ravages of the March flood is said to represent \$100,000,000 and this is regarded as a conservative estimate. A public statement was made Saturday, May 17, that the sum of \$1,800,000 will be disbursed in the State for flood relief. Of this sum voluntary donations amounted to \$650,000, the State gave \$250,000 and the Red Cross Society contributed the balance. There is a noticeable discrepancy between the loss entailed and the relief fund, which argues for the prevention of a similar serious disaster.

Once more attention is called to the fact that the hand writing on the wall spells B-R-I-C-K.

A wholesale destruction of property, as was experienced in the recent flood, would be impossible in European countries. In England the houses and even all of the outbuildings are of brick. In a day's journey one will not see half a dozen frame structures. The solidity of European buildings, and of the German especially, has been demonstrated by their durability. Their buildings become more and more beautiful with time, as

shown by many houses in England, which have been in use for three centuries. The English and German domestic types find their most beautiful expression in cottages of brick, and the very words suggest pictures of time-worn, ivy-covered houses which are beautiful not in spite of their age but because of it. One can scarcely find a frame house one hundred years old, but brick buildings one thousand years old are numerous and apparently as strong and serviceable as ever. Indeed, years add tone to a brick structure with vines growing in profusion.

In Europe the home is the proud possession of one generation after another as it is handed down from father to son. Contrast this with the houses built for our ancestors a generation ago. In most cases the structure has entirely fallen down or, if still standing, is in such a dilapidated condition as to be, if not an object of humiliation, at best a burden to the owner because of the expensive repairs necessary.

John L. Gross, a noted architect, says:

"Architects, home-builders and writers have been for years discussing the matter of a distinctive, national style

for America. Other countries have developed styles of their own, why not we? The Temple of Japan has its style unmistakably stamped upon it; the Indian Mosque could appear at home in no other land; England's plaster cottage with its thatched roof has been an integral part of her civilization. We in America have worshipped strange gods, architecturally,—those of any and all lands. Through all the motley changes, however, one style has persisted. It is not of our own making, as we had it from England when the country was young; but it, at least, has a greater claim upon us than any other architectural tongue. It is the Colonial—in reality a group of styles founded on the farm house type of Colonial times, the Georgian mansion of England and a modification of the latter effected by the Italian Renaissance."

Why not, then, in view of existing conditions, take example of our parent country, establish a BRICK style of our own and, as frame homes and structures are wiped out by flood or flame, leave no stone unturned to replace the depleted structure by something more safe, more durable, more sanitary. Why not have the emergency advertisements ready as suggested by the efficiency expert, Mr. Casson, "REBUILD WITH BRICK," and use also any other legitimate or expert measures. The people in general seem to be from "Missouri" and require being "shown." They are like the heathen, they will have to be saved against their will.

Proves Advantage of Proper Publicity.

In connection with the suggestion that no stone should be left unturned to impress upon the public the desirability of brick in building propositions, a quotation from a private letter from Frank Hopley, Secretary of the Clay Products Exposition, is apropos and characteristic of the writer, as anyone will agree who knows him. It was from the inventive brain of Secretary Hopley that emanated the idea of the Parcel Post house to be erected in the Coliseum as a feature of the Clay Products show at Chicago, and which was built from bricks sent from every brick yard in the United States. Secretary Hopley enjoys the distinction of being a brother of the writer and in reply to an inquiry as to how the Parcel Post house was coming on he wrote:

"I do not know of any proposition lately which has had so much publicity as our Parcel Post house. It is certainly funny that all the newspapers would be glad to get foolish items of this kind and would not be interested in the really helpful, desirable stuff which we could hand out to them in regard to fireproof construction with clay products and the caring of the public health through clay product sewers, to say nothing of the brick highways which need no repairs and last for a century without any cost of upkeep as compared with other highways which must be rebuilt every four or five years, at practically one-half the original cost."

The public will have to be "shown!" Why not legislate? There is legislation on matters of far less importance than the claims set forth by those who have made a study of the desirability of clay products. Why not get in touch with the board of public health? The two are links in the same chain.

Thirty-six thousand lives are imperiled by fire every day in America. New York has 12,182 fires a year with a fire loss of \$7,568,666. London has about 3,843 fires a year, Berlin 3,000, with a loss of perhaps \$170,000. The New York fire department costs \$10,000,000 a year and it is estimated that the cost of public and private protection combined amounts to nearly \$60,000,000 a year.

The annual cost of fires and its accessories in round numbers is just about an even \$600,000,000 a year. The greatest activity in building construction netted just \$615,000,000 worth of new buildings and alterations in twelve months so that with all our vaunted activity we produce equal in money to only a trifle more than the value of the property we destroy by fire. In 1909 it was estimated that in five years' time the total loss by fire was \$1,257,716,000, with the comment by those in a position to know that "no other nation on earth could stand this strain and even we are beginning to feel it."

In an article on "The Wooden Cities of America and the Brick Cities of Europe," it is stated that "Apart from any incidental or accompanying expense the cost of fire of actual combustion and destruction of property in this country is equivalent to a per capita tax of \$2.30 annually. In all of Europe the average corresponding tax is a trifle less than 33 cents per capita. In Italy it is 12 cents. In Germany 49 cents. In 30 foreign countries it is 61 cents, while in 252 American cities it is \$3.10. We have 4.05 fires to each 1,000 people. Europe has .86 fires per 1,000. In all of London there are on an average 3.843 fires a year and in all of the whole of the British kingdom in the same period there were but 35 fires at a cost of over \$50,000 each and the total cost of the 35 fires was but \$3,785,000. Rome, a city of 500,000, suffers a damage of but \$56,000 a year, and her fire department of 200 men costs but another \$50,000.

In Europe they have always used less combustible material than is used in America. Wood has been less plentiful than here. They are more careful and a fire seldom ever goes beyond the building in which it originates, while here hardly a day passes but that we read of a fire destroying two, three, twenty, forty or more houses at one fell swoop.

Wood has long been regarded as the cheapest building material in America in respect to first cost and for this reason it has been the popular opinion that, except for the wealthy, brick was too expensive.

All the time, however, the supply of timber has been diminishing and today the price has advanced until it is not much cheaper than brick. In fact, the difference is so little that with the many advantages of the more enduring material it seems almost folly not to use it. An ordinary brick house costs from 5 to 12 per cent more than one of frame construction—yet with the upkeep necessary, on the frame—at least \$12 per year on an eight room frame house, which is the average interest on \$200, brick, after all is the cheaper.

Brick's Supreme Advantage.

It has been said by competent judges that it has been proven in all countries that "brick is the most permanent building material in the world." No more dignified or artistic material exists. One of the great advantages of brick is that it can be bought almost everywhere as a home made material. Almost every town and village has its clay bank and brick yard, with no possibility of the supply becoming exhausted as is the case in the depleting of the forests and there are no charges on brick as for the freight on wood.

Being especially interested in the endurance of brick and in the supremacy of brick over frame structures, it was noticeable in many instances where frame houses had been swept off their foundations, in many instances overturned or carried for miles, the brick chimney was intact, either the brick chimney piece inside, or the chimney extending above the roof, or both.

How Cox Got Into the Game

SYNOPSIS OF PRECEDING INSTALLMENT.

A dilapidated clay plant in Ohio is left Albert Cox, a young insurance solicitor, by his grandfather. Cox visits Mauryville with the idea of selling the plant to some one. Selling is his profession and he argues that any one who learns the principles of salesmanship should be capable of selling anything. He finds, however, that the clay plant has not been run for years and that the clay supply is exhausted. The machinery is antiquated and Sawyer, the old foreman, tells him it is only good for junk. Cox considers cutting up the land into city lots, but the gaping holes in the clay pit soon convince him that his task is hopeless, and he is about to give up in despair when he meets Charlie Simpson, a student at the state school of ceramics, who is home for the summer vacation. Simpson, in exploring the neighboring hills, finds an excellent deposit of clay on one end of the Cox estate. Cox becomes interested in the young man's enthusiastic report and, despite Sawyer's despairing advice, plans to turn the discovery to practical use. He obtains an option on the adjoining property and offers to sell his holdings to Brown Bros., a prosperous firm of clayworkers in a nearby city, which is seeking a new location. The eagerness with which the Brown Bros. take up his offer suggests to Cox that young Simpson was right when he said the clay was of an unusual quality, and getting a sample brick made he slips into Cleveland to consult an architect. It is his intention to verify young Simpson's claims with the idea of establishing a value on the property. To his surprise the architect is very enthusiastic over the brick and offers to take 200,000 on a 60-day delivery. On the impulse Cox agrees to furnish the brick. A visit to other architects gives him tentative orders amounting to 1,000,000 brick. This decides Cox and he determines to go into the brick business. He starts out to rehabilitate the old plant with the assistance of Sawyer and young Simpson. After a visit to the Steinway Brick Machinery Co.'s plant at Pressville, Cox selects his equipment.

"Oh, Mr. Cox," he exclaimed, "I want to see you just a moment." He drew me off to one side.

"I do not want to lose that order of yours. You see this is a little off-season for us and we can afford to make some concessions to you. If you will keep the matter confidential I'll trim that bill \$500 more. That will make it \$24,500."

He stood expectantly awaiting my answer.

"Make it \$22,000," I replied quietly.

"That would be out of the question, Mr. Cox. You see we have to go to extra expense in putting on a large crew on those kilns and I haven't allowed myself any margin to speak of."

The train whistle for the station was heard just then and as I started to walk down the platform where Sawyer and Simpson stood, I told him that I would let him hear from me the next day.

Gertz kept close to me as we started for the train and as I turned to shake hands with him he whispered in my ear:

"I'll make that net cash \$24,000 even—not a cent less."

I waved my hand at him as the train pulled out of the station.

The next day we rode to Alton and went through the Progress shops. I got a price of \$23,000 on the equipment but neither Sawyer or Simpson were impressed much with their machines, especially the auger, which did not have the capacity. Then, too, they declared it absolutely out of the question to promise delivery on the kilns.

We took an interurban car over to Pressville and reached there about noon. Gertz was all smiles when he saw and offered cigars in anticipation of the order which he felt was his.

"We came to see you again, Mr. Gertz, just as I told you we would."

BEING THE STORY OF A YOUNG MAN WHO FELL HEIR TO A RUN-DOWN CLAY PLANT

By Iverson C. Wells

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"See the Progress people?" he inquired.

"Yes."

"Guess they couldn't begin to touch my figures?"

"Their trouble is chiefly a case of delivery," I replied. "Their prices were lower."

"Well, no one can come up to us when it comes to turning out stuff," he smiled in a satisfied sort of way. "And prices—why—" He waved his hands suggestively.

I asked Gertz if his price was the best he could make but it didn't take me long to ascertain that I had gotten about the best figures he was able to make without jeopardizing the problem of delivery.

As we discussed this point Gertz' confidence increased and he was about as affable a fellow as one would care to meet. Finally I decided it was time to close the deal and said so.

"How about terms?" I asked.

"What sort of terms do you want, Mr. Cox?"

"I've only a limited capital and I must have a long line of credit."

There was a perceptible change in the atmosphere, and I am positive if there had been a thermometer within ten feet of Gertz the bulb would have registered twenty below zero.

"How much money do you expect to pay down?"

My bank account stood at \$6,800. I figured I needed the greater part of that for running expenses.

"I can pay a cash deposit of \$2,000," I replied. "For the rest I will give my notes, with a mortgage on the plant and property, these notes to be three in number and for sixty, ninety and one hundred and twenty days."

Gertz sat in deep meditation for a moment.

"What you're asking, Mr. Cox, is unusual. Our terms are cash thirty days. We seldom make an exception. I suggest you consult with our president, Mr. Steinway."

I was ushered into Steinway's private office and Gertz, after telling him my proposition, left me to his tender mercies.

Steinway was a short, puffy-faced fellow, but he looked thoroughly business from head to foot. I could see I was not dealing with a Gertz at my first glance.

"How long have you been in the brick game?" he asked motioning me to a chair across from him.

"About twenty-four hours."

He looked at me rather closely for a moment and then drew his chair up a few inches nearer mine.

"What makes you think you can make brick?"

"I expect to let the other fellow make them," I replied.

"Oh, so that's the way you figure it? And pray what do you expect to do—just sit back and draw dividends?"

"No, I'm going to sell brick."

"You've been a brick salesman, I see?"

"No, never sold a brick until a few days ago."

"Well, all I can say is that you've got nerve!"

"That's just what I've always been told."

I reviewed my brief experience in the brick business

pretty thoroughly, not omitting a single detail. I even got my Cleveland architect on the long distance telephone and had him confirm his proposition to me. I also got the other dealers and architects on the wire and they corroborated by statements as what I could do in the way of sales.

Steinway plainly was interested. I believe if I had pressed him a little I could have sold him stock in my proposed plant.

Two hours later I left the Steinway shops with a signed contract in my pocket in accordance with the terms Gertz had agreed to and the Steinway Brick Machinery Co., had my check for \$2,000 and my three notes for the balance.

"You've got a wonderfully fine proposition there, Mr. Cox," Steinway told me as I bade him goodbye. "The terms you have gotten from me are unusual, but I believe the conditions warrant them. Good day."

* * * * *



HE next few days were pretty busy ones for us. Sawyer pitched in with an energy that surprised me and more than once I had to caution him as I feared he would break down before the real crisis came.

We got a force of men at work clearing up things and getting the old sheds into fairly usable condition. The power plant was in a frightful condition but we managed to patch it up.

"It'll make steam and turn the machines," commented Sawyer one day, "but that's about all."

When we got the boiler cleaned out and the engine in fair shape we tried out both. The engine was of obsolete type and it wheezed and sputtered like an old nag with the heaves.

Before the first week was over some of the machinery arrived and we began to install it. As the days passed along I grew rather uneasy, however, about the kilns. More than once I telephoned the Pressville people and urged them to get started.

It was eight days after I had placed the order with the Steinway company the first arrival of the skilled labor reached Mauryville. I will say, however, that Steinway went at that job with a vim when he did get started.

It is unnecessary for me to detail the incidents of the next three weeks. They are too much like tragedy. More than once I felt as if I would chuck the entire proposition and get back to the insurance game.

Near the close of the second week we had practically all the machinery installed and started up the auger machine. We had to get busy making brick because we were to depend on open-yard drying and it was necessary to have the brick dried, of course, by the time the crowns were put on the kilns and to economize on time as much as possible.

I presume we had the usual difficulties attendant to the opening of a new brick plant—at least troubles were in evidence and Sawyer assured me they were a part of the game.

Naturally there were several misfits. These were to be expected when you take into the consideration the hurried way in which we went at the purchase, but thanks to Sawyer and young Simpson, we finally got the kinks smoothed out and on Wednesday noon of the third week we were piling brick on the yard for drying.

Up until this time luck had been fairly with us. There was a hot July sun and cloudless skies. I consulted the almanac and found that we could reasonably expect a continuation of good weather and I felt somewhat encouraged.

In the meanwhile the kilns were going up with a rush. Steinway had a force of men on the job and two or three times during that period of construction he came to Mauryville to personally inspect the work and see that it was being rushed along.

Despite several delays in the grinding room and other setbacks we had 300,000 brick on the yard drying the first ten days after we started the brick machine.

As the time wore along I began to spend most of my time consulting the weather reports and signals sent out by the Government. Twice cloudy days were predicted and I got a crick in my neck looking for the first appearance of a suspicious looking cloud in the skies.

I do not believe I ever spent such a two weeks in my life as I did while that first batch of brick were out on the yard. I never knew I had nerves until then. I had often heard of persons who "were on edge" but never realized what it meant. I know now.

Sleep was out of the question. I tried to count sheep in my effort to coax slumber but the fleece-covered animals would turn out to be brick and I wearied myself into a nervous fit as the endless stream of clay cubes would pour over the meadows and across the fields.

Overworked nature had compassion on me and I dropped into a restless slumber. My eyes would barely close when a prowling cat would bring me back to sensibility by upsetting a tin pan. The crash invariably suggested thunder and I would lose no time in rushing to the window and looking out to see how near the storm was. The starlit sky that greeted me was, of course, a decided relief, but sleep for the rest of the night was out of the question.

Finally on the night of August 12th, just four weeks to the day after we placed the order with Steinway, Sawyer told me we could begin to set the kilns early the next morning. The men were still working on the job but he assured me the setters would not interfere.

Bright and early I was out in the yard and waiting for Sawyer and his men to come to work. Heavy clouds hung over head and I had a lump in my throat when the old brickmaker and two of his men came up from over the hill and walked slowly towards me.

It was nearly a week before we had all the kilns set. Twice during that time we had to stop work and all hands turn to covering the sun-dried brick when a sudden summer shower came up unexpectedly.

We never would have made such good time had we not worked a night and day shift. At young Simpson's suggestion we tapped the main feed wire of the electric light company that ran by the plant and hung electric lights in each kiln for the men to work by.

On the morning of August 14th, we fired the first kiln. As a kiln was set we started the fires and they were all going by the 18th, Sawyer getting some help from the Brown plant at Sorensville.

Everything was going along nicely and I figured, barring serious mishaps, we would be able to get those 200,000 brick into Cleveland by September 12, the date of the promised delivery.

Now, that the big rush was over and everyone was working under normal conditions the reaction set in and Sawyer was the first to feel its effect. The old superintendent had been kept so busy up to this time he never had time to nurse any personal grievances. For two days, however, I had noticed he was growing very cross and that these spells of his were more severe when

young Simpson came near him. Once Sawyer turned on the youth with a savage snarl that boded no good and cautioned Simpson not to come in contact with him any more than was absolutely necessary.

One morning—two days after the water-smoking had begun, something went wrong with the cutter which young Simpson was in charge of. Sawyer happened to

pass about that time and with a rough push thrust aside Simpson who was adjusting the machine. Simpson stumbled over a pile of clay but was up in a moment. Before any one could interfere he had rushed at Sawyer like a mad bull. The superintendent wheeled in time to see him and was prepared for him.

(The continuation of this story will be in the June 15 issue.)

Texas Brickmakers Fear Lower Tariff

Lowering the tariff on brick will have a serious effect on some of the plants situated in those portions of Texas and the Southwest which are adjacent to Mexico. For more than twenty years Monterey, Mexico, has been an important brick manufacturing center and is located within 150 miles of the Rio Grande. It has three trunk lines leading to the United States border, and during the time that Mexico was at peace Monterey sold and shipped many millions of brick to Texas points and to Cuba. Four million brick were supplied from Monterey plants for the construction of the outfall sewer at San Antonio, Tex., several years ago, and as a number of different grades of brick are made in Monterey and other towns of Northern Mexico, the competition will be felt with greater force, if the lowered tariff, provided by the bill now before the Senate, becomes a law. While some manufacturers will be able to meet the competition, it will be by the employment of cheap Mexican labor, and this is practical only at Laredo, Brownsville and other border towns in Texas.

On the other hand, manufacturers in Mexico are looking forward to a profitable market in the United States and will be in a position to come in at a very low figure,

as soon as the revolution is at an end. At Tampico, the one bright spot in Mexico at this time, an enormous amount of American and British capital has been invested, particularly in the oil fields in that city and the surrounding country. Being a Gulf port and well protected from assault by rebels, it has felt very little of the disturbances that have created such havoc with other parts of Mexico. In fact, it is claimed that the prostration of industrial enterprises in the remainder of Mexico has caused many people to come into Tampico and its adjacent peaceable territory and embark in various lines of business enterprises, which may account for the fact that at this time there are more than five hundred buildings under construction in that city, and contracts will soon be let for a thousand more. The latter are all to be residences for the employes of two big oil refineries that are being erected there. It is the first Mexican city to ever have a real American building boom, and the demand for brick for building purposes is very great and hard to supply. No brick is as yet manufactured in the immediate vicinity of Tampico on account, it is claimed, of the lack of a suitable clay. In this connection Mr. Colyer's letter on page 993 of this issue is particularly interesting.

ALBERTA BRICK MEN FORM ASSOCIATION.

Provide Honorary Memberships for Architects and Ceramic Engineers.

At a meeting held recently in Calgary, Alta, thirty-three delegates, representing a large proportion of the clay-working interests of the province, met and elected officers in a permanent organization, to be known as the Alberta Clay Products Manufacturers. It chose, for the first year, W. J. Tregillus, of the Tregillus Clay Products Company of Calgary, president; Mark Drumm, of Frank and Calgary, as secretary-treasurer; J. P. Henry, of the Acme Brick Company, of Edmonton, first vice-president; F. Vickerson, of Lacombe, second vice-president; and Lew Thorne, manager of the brick plant of the Keystone Portland Cement Company, of Blairmore, third vice-president.

Resolutions were adopted providing for committees on credentials, resolutions, legislation, freight rates and publicity. Provision was made for associate membership, to include clayworkers outside the province and machinery manufacturers. Honorary membership was extended to architects and ceramic engineers.

Considerable discussion was given to the standardization of brick sizes and it was decided to collect information on this point and receive the result at the next annual meeting. The new association decided to be represented by good exhibits of clay products at the forthcoming exhibitions of farm products and machinery, to be held at Calgary and at Edmonton, Alta.

ADD TO COST OF TRANSPORTATION.

Railroads Petition Interstate Commerce Commission to Advance Freight Rates Five Per Cent.

A petition of great moment to manufacturers of clay products has been filed with the Interstate Commerce Commission by the Baltimore & Ohio, the Erie, the New York Central and the Pennsylvania systems, asking for a rehearing of the petition filed by them in June, 1910 and, after hearing, denied. The present petition amends the request for permission to advance freight rates, naming a specific percentage required to meet increased operating costs and extraordinary expenses, such as those recently incurred through the Ohio floods. This is a particularly good time for the railroads to present a petition of this character, as they have the recent advances granted employes to show as a part of the increased operating cost and the recent floods are still fresh in the minds of all parties interested in the hearing. It is a matter of record that the repairs necessitated by the damage due to high water along the Pennsylvania Railroad will cost over three and a half million dollars.

J. A. Holley, George Rohwer and R. M. Benton are the incorporators of the Clay Products Co., of 402 Ideal Building, Denver, Colo., the capital stock being \$50,000. The company will increase its daily capacity from 20,000 to 50,000 and install new and larger kilns and drier, and increase their power plant. The factory and clay banks are located at Castle Rock, 31 miles south of Denver, Colo.

Why I Built a Fire-Proof Home

BEING THE PERSONAL STORY
OF A BRICK SALESMAN WHO
WAS PERSUADED TO PRAC-
TICE WHAT HE PREACHED

By William J. Ball

*Sales Manager Barber Asphalt Paving Co.,
of Des Moines, Ia.*



Mr. Ball has written this article at the solicitation of the editor who recently was a guest in the cozy little home. The original plans and the economical construction should give "Brick and Clay Record" readers some valuable suggestions.

The treatment of the hollow building block on the interior is unusual and opens up new possibilities. It will be noted that no plaster is used and that the block are untreated in any manner. The effect is very pleasing. The total cost of the house was \$2,100.



ELLER, a salesman for Impervo brick, looks over the building permits and sees that his friend, Builder, is about to erect a home. "No trouble to sell him, he knows what's good." Losing no time he telephones Builder for an appointment, and that evening Mr. and Mrs. Seller call at the Builder apartment.

The subject soon turns to the new home and Seller immediately waxes eloquent. "A brick home is fireproof; less insurance; moisture proof; requires no painting; warmer in winter, cooler in summer. Costs only 10% more, or \$300 on a \$3,000 house. Does not depreciate, grows venerable with age, and is a joy to its owner, and the envy of his frame house neighbor."

Preparing for the "clincher" argument and "oiling up" for the "home stretch," Seller is about to flash some views of homes recently built of "Impervo" brick when Builder says:

"You have been selling brick for five years, and two years ago, when you built, you built a frame house. How about it?"



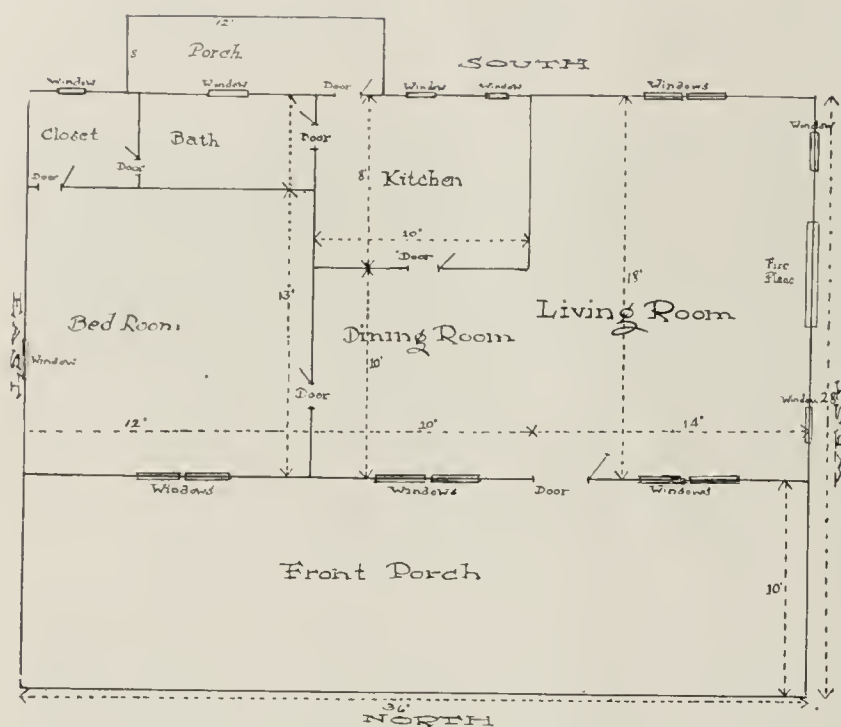
The picture at the left barely does Mr. Ball's house justice as it is a much cosier and roomier house than it appears. The upper picture is of the living room. Note the hollow-tile walls and the chimney breast.

Seller hesitates and finally says:

"Well, we brick men have been asleep. We didn't know the possibilities of our own material. Hadn't looked up comparative prices. Last year I went to Chicago to the annual convention of the National Brick Manufacturers' Association and attended the Clay Show. I heard the leading architects tell of the beauties of brick and its possibilities. Herbert Casson, the efficiency expert, aroused my enthusiasm and now I am a brick booster because I believe my selling talk."

There is more truth than fiction in Seller's experience, and while I have never had exactly the same experience, I decided if I TALKED clay products I should LIVE clay products. I concluded it would be just as sensible for me to build a frame house as it would be for an automobile salesman to solicit with a jackass.

Securing a lot in the vicinity of the brick plant.—yet



Floor plan of Mr. Ball's cozy bungalow.

far enough away to be free from the undesirable condition that surround all factories, we built what is known as a "fireproof" bungalow.

The lot has a frontage of 150 ft. by 132 ft. deep, and faces one of Des Moines' most beautiful parks—South Park. A natural grove of 30 native oaks surrounds the home. Running through the rear of the property is a brook bordered by willows and native grasses.

The foundation of the bungalow is laid on a concrete footing, 12 x 16 ft. The 9-in. foundation is faced with paving block backed up with hard-burned hollow brick. No headers are turned but wall ties are used every fifth course. This, together with the inch-air space, practically insures a moisture-proof foundation without the use of an asphalt coating. The exposed parts of the foundation are faced with a No. 1 Brown Faced Paving Block, size $3\frac{5}{8} \times 8\frac{1}{2}$ in. Liberal use of the kiln marks is made. This gives character to the wall and does away with the dull monotony of a uniform and therefore dead face.

The superstructure is faced with a No. 1 Vitrified Brown Faced Paving Brick, size $2\frac{3}{4} \times 8\frac{1}{2}$ in. Cement mortar used throughout. All joints are raked. A brown faced 4 x 8 x 16-in. hollow tile is used for backing up the superstructure. They are laid the 8 x 16-in. face out, and tied to the veneering face course by a wall tie.

Plaster is noticeable by its absence, as the interior course of blocks are laid up in red brown mortar, and left without plaster. This may bring a doubt to your mind as to warmth, but as we lived through two winters with the thermometer as low as 30° below zero experiencing no difficulty in heating, our experiment is practically beyond a doubt.

The large fire place is laid up with a light brown "rattled" brick. To you who are not familiar with paving brick terms a little explanation may be necessary. Paving brick for paving purposes are tested to see if they are "right" for pavements. Briefly, the rattler is an iron cylinder composed of 14 staves each about 30 in. long and 4 in. wide. These are bolted to 214 sided heads about 30 in. in diameter.

The construction is similar to the rattler used to clean castings in a foundry, only that 10 brick are placed in the machine together with the "abrasion" charge, which is composed of various sizes of cast iron, the total weight of the charge being about 300 lbs. After the iron cylinder has been turned on its axis 1,800 times in one hour,

the brick are removed from the machine and the ratio of loss between the weight before and after testing is the percentage of loss. The average is 20%. The brick are taken from the rattler in appearance not unlike an oblong cobble stone. The best of these were chosen for facing the fireplace. Laid up in Venetian red mortar, with a deep raked joint, the effect is very pleasing. We are told this is the "pioneer" "rattled brick" fireplace.

The ceiling is faced with compo board paneled with cypress strips, $\frac{1}{4} \times 2\frac{1}{2}$ in. wide. I believe the effect would be more effective with strips 2 x 4 in. or even larger. Tile and compo board are used throughout the bungalow the same as in the living room.

The attic has a bed room 10 x 14, finished in compo board, the balance being used as a store room.

The first floor joists are extra heavy, considering the size of the bungalow, 2 x 10. The attic joists 2 x 6.

The roof is No. 1 ship lap, laid tight and covered with Genasco three-ply asphalt roofing fastened with Kant Leak cleats, the same material being used on the gables.

By reference to the plan you will note that the entrance to the living room is so arranged as to make half of the porch private, as one can enter the living room by crossing but ten feet of the west end of the porch: The east half of the porch is used as an outdoor living room, which is readily converted into a sleeping porch.

The porch pillars are from native oaks placed equidistant. From the ground line to porch floor the three panels formed by the oak pillars are filled with oak slabs. Native woodbine is rapidly covering the whole porch, giving a very rustic effect.

As the lot slopes to the rear, the kitchen door opens on the second floor of an 8 x 12 double deck porch. The siding of this porch is so arranged that the upper half is made in panels which swing upward and out, the panels forming an awning when open. This makes a very practical summer kitchen.

The plans were drawn by myself. All the material was purchased direct, and a brick mason and carpenter were given a contract to perform the labor. Personal and daily supervision was made and no delay was encountered "because the mill couldn't make delivery." In this I not only received a liberal education in building materials and construction, but we were living in our home 30 days from the date of the laying of the first brick.

As much care was taken in the selecting of materials the comparative cost with the average frame building would be unfair to brick, but I believe that an estimate of 10% additional over a frame building is liberal. Considering that my neighbor, who built a frame house the same year, is about to paint, who is ahead of the game?

In closing I would say that I am thoroughly convinced that brick is the ONLY building material, and that any claimed "just as good" substitute cannot equal clay products, as "neither by Frost, Fire, Flood nor Time are Well-burned Clays destroyed."

WANT A SUPERINTENDENT FOR YOUR PLANT?

Insert an ad in the Classified Columns.
All good men read the classified ads in
"Brick and Clay Record."

Selling Brick

SALESMANSHIP AND ITS APPLICATION BY THE MANUFACTURER OF BURNED CLAY PRODUCTS

By Iverson C. Wells

This is a series of heart-to-heart talks on one of the most important and most neglected departments in the successful conduct of a clay product plant. Mr. Wells also will review current advertising by clay plants, as publicity is one of the essentials of good salesmanship. Manufacturers are invited to submit copies of their advertising for critical review.

about the same effect, and they wonder later why it is they cannot sell.

ENTHUSIASM absolutely is necessary. It is a quality of temperament that is communicated to others within its scope of influence just as any contagious disease is passed about.

If you naturally have no enthusiasm for whatever you are selling, cultivate it.

Take up your ware and study it from every angle. Learn every detail about it. Ascertain its good point. Soak up all the information possible. If, by that time you have not aroused an enthusiasm within yourself, there is either something wrong with you or your ware.

Nine times out of ten the trouble lies with you. You lack confidence—not in the brick, but in yourself.

The thing to do in this case is to get the necessary confidence in yourself.

If you learn thoroughly your subject confidence comes easily.

If you really KNOW your ware no buyer can stump you and you FEEL it and you BREATHE it. You have a ready answer for every Doubtful Thomas. Confidence beams on your countenance when you enter the architect's office and enthusiasm naturally rides along with it.

IT can be seen, then, that enthusiasm may be cultivated. To some the work will be a greater task than to others. The time required depends absolutely on the temperament of the student.

But do not confuse enthusiasm and bombast.

In other words do not permit yourself to believe that rushing into an office like a Kansas cyclone is enthusiasm. Do not fool yourself into the belief that an effort to sweep the buyer off his feet with a sudden outburst of oratory like the proverbial book agent uses is enthusiasm.

It is not. And instead of having the desired ef-



Educated Enthusiasm

Heart Talk No. 3

ENTHUSIASM, according to Webster, is a "Strong excitement of feeling on behalf of a cause or a subject." This mental exhilaration easily is induced if the condition is favorable. It proves most stubborn if this condition is not favorable.

Few ventures we undertake—no matter their nature, are successful to the limit of their possibilities if we are not enthusiastic in presenting the same.

Selling brick and clay products is no exception. A brick salesman who does not believe in his ware—who does not believe that it is just as his employer says it is—the best building material in the world, is going to have a hard time stirring up enthusiasm or a "Strong excitement of feeling" on behalf of his cause.

Imagine a salesman entering an office of a contractor or architect, moving and talking in listless fashion, who fails to show the same interest in the ware he is trying to induce his prospect to display and who opens up his battery with an introduction like this:

"Here is a brick I want to sell you. I really do not think much of it myself. It may be good color and it may be burned just right, but I haven't taken the trouble to ascertain if this is true or not. I do not care whether I sell it to you or not. How many do you want?"

Of course salesmen do not say this so many words, but their lack of enthusiasm and the absence of real interest in their own proposition has

fect you will make yourself obnoxious and display a displeasing personality that will make your prospect antagonistic at the start.

You will not only have to convince him your ware is what he WANTS, but you will have to convince him that you are a SANE person before you can get his attention.



HERE is an illustration of cultivated enthusiasm:

Once there was a young newspaper man in a Southern state. He was born in a democratic community. His father and his forefathers were Democrats. His friends and his acquaintances were Democrats. In fact, a Republican who was a white man was as scarce as teeth in a hen's mouth.

BUILD WITH BRICK

BUILDINGS THAT ENDURE

Probably the first burned brick ever used in buildings have recently been discovered in the remarkable excavations of Babylonian cities by the Germans. These bricks were made over 6,000 years ago and are in a perfect state of preservation. The ruins of the palace of Nebuchadnezzar also contain brick, so perfectly preserved that their blue, yellow and white colors are as fresh today as they were when Daniel read the handwriting upon the walls which they made.

What the experience of the ancients and a study of their burned cities teach, thoughtful men of today are fast realizing—that it is

Best to Build with Burned Brick

No matter what kind of a building you propose to erect, if it is worth building at all it is worth building well. The factory, the warehouse, the store, the home should be built with brick. It is the wisest economy. Building with brick lengthens the life and decreases the cost of maintaining a building. Brick reduce insurance premiums, lessen fire hazards and minimize repair bills of a building. Brick increase the comfort, add to the stability and improve the appearance of a building.

OUR BRICK ARE GOOD BRICK

Samples and Quotations Gladly Furnished

The accompanying illustration shows the beautiful smoke stack of the Albany Cotton Mills, built with our brick. This stack is 34 feet in diameter at the base, 22 feet at the top and towers 185 feet above the ground, with a foundation of twenty feet deep.

FLINT RIVER BRICK CO.

Albany, - - - - - Georgia

Some recent examples in newspaper advertising by brick makers in an effort to create a local demand for their product.

All his life he had lived in this political atmosphere. The newspapers he had worked on were Democratic and whatever he had written for those papers had been written from the viewpoint of the political faith in which he had been brought up.

One day he received a flattering offer to go North and accept a position as editorial writer on an enterprising daily newspaper in a small community. He accepted the offer without considering the political faith of the paper.

At the first conference with his employer he discovered that the paper was Republican in politics.

This fact, however, did not feaze him.

There was a local campaign on. Local politics

were about evenly divided with the two parties—Republican and Democratic.

Our newspaper friend plunged into the deepest of the fight. At first his editorial utterances were stilted. They lacked force. They lacked convincing power. But gradually he got enthused in his subject. Before the campaign was over he was writing as stirring editorials from the Republican viewpoint as he once wrote from the standpoint of his own party.

For the first time in three years the Republicans won a local election and credit was given the newspaper he was employed on for much of the victory in changing public opinion.

This was cultivated enthusiasm and the salesman who has not this same adaptability will never make a GOOD salesman.



ONLY three newspaper ads are shown in this issue, one of them being from the Parke company of Decatur, Ill., whose ads have been reviewed in this department before.

The Flint River Brick Co., of Albany, Ga., sends a copy of a special edition of the Albany "Herald" containing a full-page ad of the concern, asking that it be reviewed.

Don Valley Clay Products

For over twenty-two years the products of the Don Valley Brick Works have been increasing in variety, quality and popularity. Today Don Valley Products are regarded as the best in America in every way.

Buildings erected years ago of Don Valley Brick look as clean-cut and fresh today as when they were built.

Don Valley Brick has won out in competition with the leading brick manufacturers of the world.

Porous Terra Cotta Fireproofing

Don Valley extensive clay and shale deposits include a clay particularly well suited to the manufacture of Porous Terra Cotta. This raw material coupled with our modern facilities and experience results in the best rough and strong fireproofing.

Don Valley Clay Products are used in most of the important buildings from Halifax to Vancouver.

Always Specify "Don Valley" Clay Products

Don Valley Brick Works

TORONTO - ONTARIO

The Old Colonial House in Brick

Has been original since recently, now, however, the brick makers and bricklayers too, are doing wonders in producing beautiful effects, and the Architect with his resources, can place knowledge in securing final satisfactory results.

The result of the best efforts of the Brick and Terra Cotta Manufacturers on Exhibition.

Our brick unlike those of other makers for houses and commercial use, are durable, strong and contain no water, representing the best of the manufacturers in every part of the country, meeting you in every satisfaction in selection.

"Nothing is Better" "Nothing"

PARKE & SON COMPANY

DECATUR, ILLINOIS

There is little to criticise about the ad, as it is not only well displayed, but it also presents its argument in a most excellent manner. Possibly the failure to emphasize the fact that brick is used for more purposes than chimney construction might be criticised. In view of the nature of the extra or special edition of the Albany "Herald" in which this ad appeared it seems that an appeal to the prospective home builders of the city and community would not have been amiss.

Lack of space to tell the full story of brick cannot be used as an excuse, as the advertisement occupies a full page.

The advertisement is well-balanced and, if fol-

lowed by a series of smaller ads in the regular editions of the "Herald," should prove a profitable aid in creating a local demand for the Flint company's products.

The Parke company's ad is one of a series this firm of dealers is running in the local papers and reports from the Parke people show that the campaign is proving a highly profitable one. This is as it should be. The ads are well displayed, well written and there is no reason why they should not be profitable.

The advertisement of our Canadian friends is taken from a contractor's paper and was intended to interest the contractor and the dealer rather than

the local buyer. The same mistake is made, however, in this ad that is usually made with advertising of this class. The brickmaker figures that any sort of advertising will do for the trade paper and follows precedent by sticking in a "card" which contains little argument and a lot of white space.

This same concern is doing some good advertising in other mediums and should use its trade paper space to the same good advantage. If the space is worth buying it is worth using well.

The Gary, Ind., ad is from a blotter issued by our friend who "originated the parcel post idea" and is one of the numerous forms of publicity matter he is using to aid his salesmen.

FIREPROOF HOME FOR FURNITURE COMPANY.

Large Quantities of Clay Products Used in Heywood-Wakefield Co.'s New York Home.

The fireproof building, illustrated herewith, was constructed in eleven months from the date of starting the excavation until the building was finished complete.

It was designed by Lee & Hewitt, New York architects, and contains seven and one-half acres of floor

Ketcham's rough brick for the 33rd street front, all laid in Flemish bond; 11,000 enamel brick, 38,000 pavers in the driveway, 2,860,000 common brick in the walls and stairway enclosures and 35,000 square feet of six-inch terra cotta partitions.

The building occupies a plot 100 by 200, extending through from West 34th street to West 33rd street, the twelve stories and basement being occupied entirely by the Heywood Bros. & Wakefield Co., a branch of which is located in Chicago.

COLORING FOR MORTAR JOINTS.

Poorly Colored Mortar Often Mars the Appearance of an Entire Building.

Your completed jobs as they stand are the only lasting guarantee and recommendation of your work. The fancy brick so much in vogue today have brought with them the attendant problem of mortar colors for the joints. The difference in price between the poorest and the best mortar colors is comparatively slight, and yet a poor mortar color can all but ruin a builder's reputation. Fading, running, dulling, and changing in tone, these are only a few of the tricks which poor mortar colors are capable of performing, and the worst of it is that the irreparable damage always comes after the building is up.

The comparisons have been especially called to mind since the Ricketson red brick brand colors have been put on the local market. The Ricketson colors are absolutely guaranteed against any of the failings noted above, and actually go farther in the mixing than any others, because of their perfect purity, great strength of color and the fact that they are finely ground.

Good Brick Literature.

Remarkable as the late convention of brickmakers was and fruitful in the number and value of the papers read, none attracted more attention or deserved more applause than that read by Ernest Palmer, assistant general counsel of the National Board of Fire Underwriters of New York. Reprinted by order of the members of the N. B. M. A., it appears in convenient pamphlet form under the title "Our National Fire Waste; Its Cause and Remedy." It is easy for a brickmaker to understand what remedy is suggested, but difficult to realize, unless he has read the pamphlet, the fascinating diction and plausible argument that accompany the solution. Copies of this booklet should be in the hands of every one interested in clay-working, for it is a text-book of common sense to back up the "Build with Brick" slogan.



Heywood-Wakefield Building—New Fireproof Structure in New York City, Designed by Lee and Hewitt, New York Architects.

space. Construction of the building required 3,500 tons of structural steel, 75,000 bull-nose brick, 49,000 Shawmut paving brick for the 34th street front, 76,000 O. W.

Burns 30,000 Brick in 24 Hours



BUHRER SHORTENED CONTINUOUS KILN CONSUMES ABOUT 200 LBS. OF COAL TO THE THOUSAND BRICK.

The illustration at the left shows the kiln at Youghal in course of construction. The formation of the chambers peculiar to the Buhrer kiln can be clearly seen.

The illustration at the right shows the corner and side of a Buhrer shortened or zig-zag kiln, and a portion of the latticed principals of roof over the kiln.

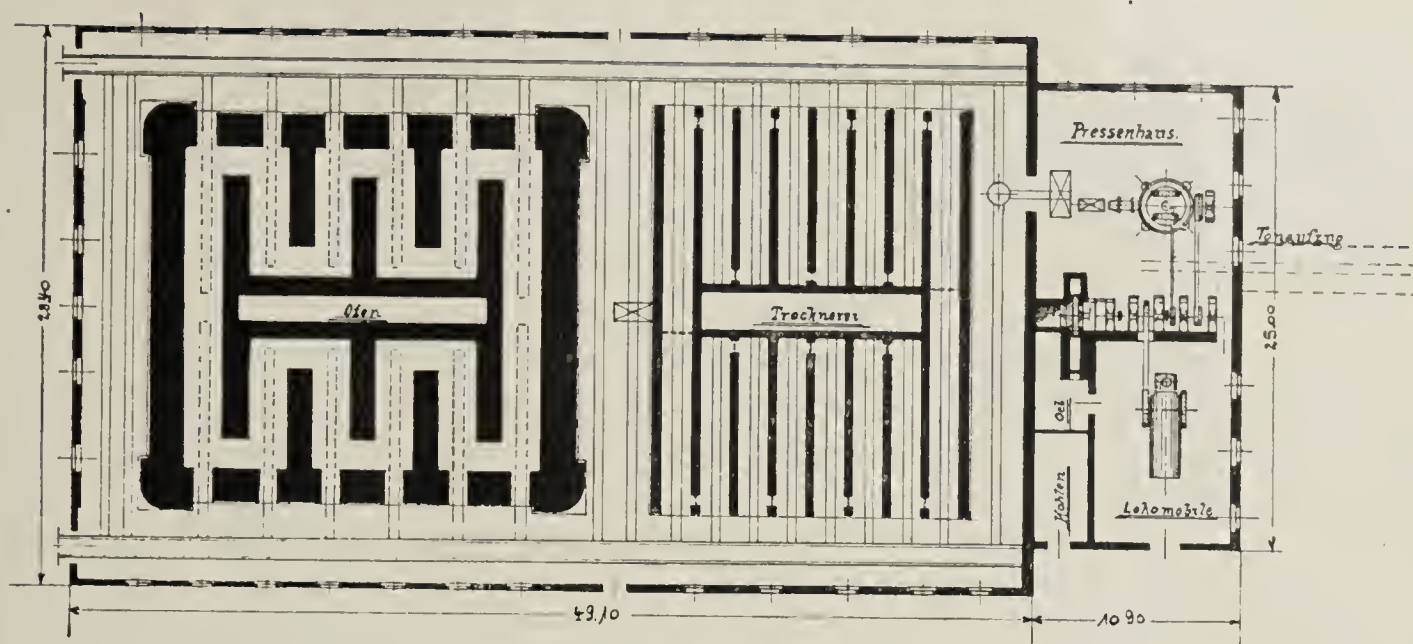


STEADILY increasing cost of coal makes the fuel saving kiln a matter of eventual necessity and, therefore, present study. Its adoption abroad has been much more rapid than here, where we have had, seemingly, an inexhaustible supply of cheap fuel. Now that we are learning that fuel is far from cheap and that it is going to be even more expensive in the future, we turn to the cutting of cost by reducing consumption—and have the continuous kiln. It was with this in mind that Mr. J. R. Smyth, managing director of the Youghal and Monard Brick Co., before planning the reconstruction of the brick works at Youghal, in Cork County, Ireland, visited a large number of plants in various European countries and as a result, decided to install a Buhrer "shortened" or "zig-zag" continuous kiln, with fan draught. A kiln of this type is now installed and is giving splendid satisfaction.

A representative of The British Clayworker, visiting the works recently, was shown over the plant and given much valuable information regarding the kiln and its work. He reports that the material is a tough blue marl, with a layer of yellow plastic clay on the top, and is made up by the wire-cut process, the bricks from the

upper clay being repressed and sold for facing purposes. The kiln is a 16-chamber one and has a length of 105 ft., a width of 78 ft., height inside chambers of 7 ft. 6 in. and inside chambers of 10 ft. Each chamber has a capacity of about 15,000 brick and, owing to the intensity of the draught, two chambers are finished firing each day of 24 hours. When the fan draught is increased, this speed of burning can be exceeded and about 34,000 bricks finished each 24 hours, the travel of the fire being 44 to 59 lin. ft. per day.

The draught is obtained by means of a Buhrer fan, 10 ft. in diameter, driven by a 50 h. p. suction gas-engine, about 20 h. p. being absorbed for producing the draught required for both the kiln and two Lancashire boilers and drawing the gases from both, causing these gases to pass under the drying room floors. The same engine drives the generator for producing electric light. The burners have charge of the gas producer and engine and they put a charge of about 40 lbs. of anthracite coal into the producer at periods of about three hours, day and night, the total consumption being about one ton of anthracite coal per week for the driving of the fan. The engine has automatic oiling arrangements and is said to



Floor Plan of Buhrer Shortened Kiln, Dryer and Machine Room.

be stopped only one hour each fortnight for overhauling. Two draught gauges are used, one on the main flue and one on chamber, four rows in front of the fire. The latter is a Buhrer recording gauge and records the variations of the draught for each 24 hours.

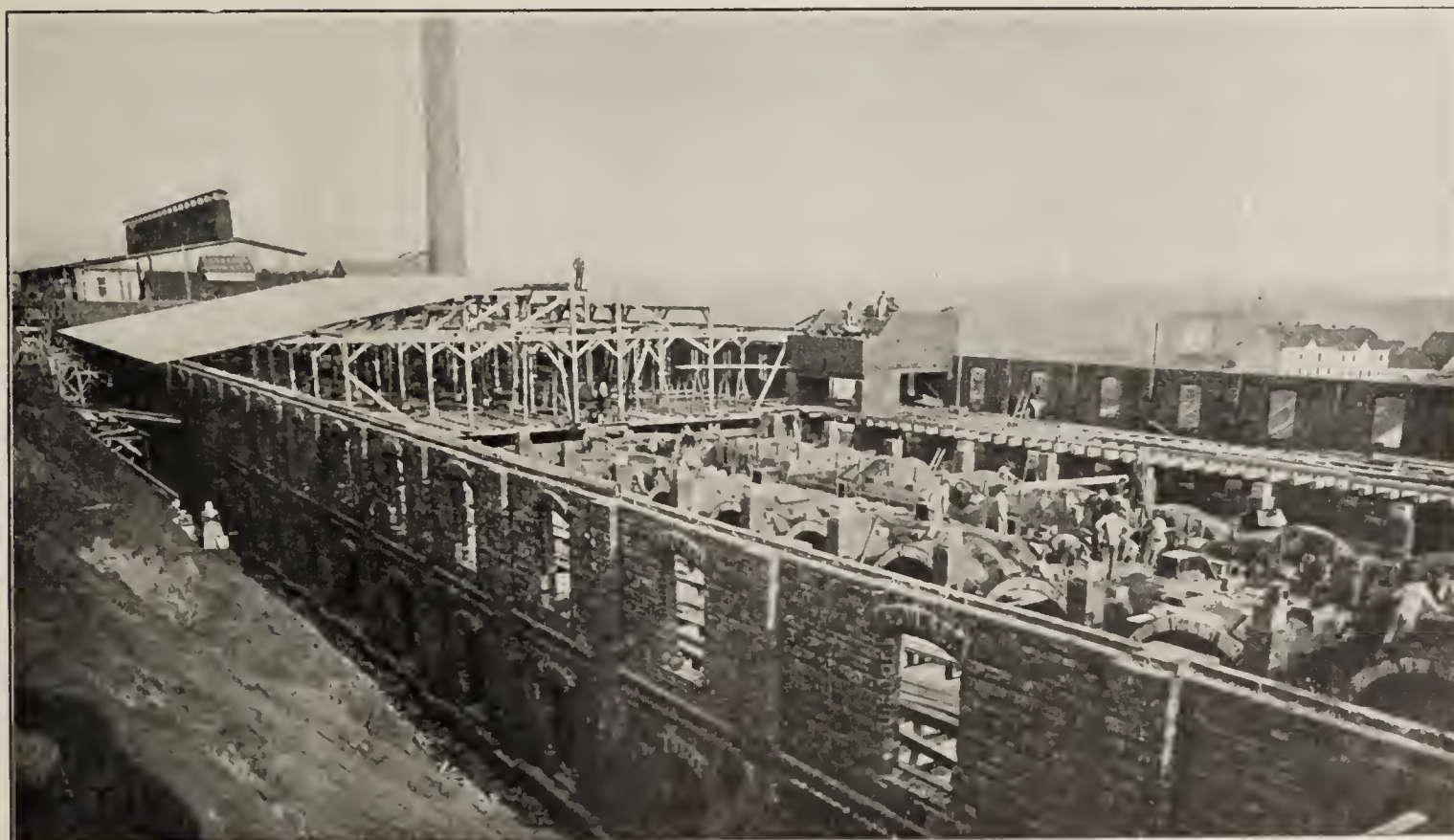
The coal used is brought from South Wales and costs about \$4.75 per ton, delivered to the works' docks. It is put into portable bunkers or troughs on the top of the kiln and is moved along as the fire advances. By keeping a strict account of the coal used, it is possible to obtain an accurate record of the amount required each day to burn brick, and the records now on file at Youghal show that the average varies from 196 lbs. to 220 lbs. per M, brick—this small amount of coal not only burning the brick, but doing its share in the drying of brick to be burned on a succeeding day. The bricks are burned at about 2,000 deg. F., and are even in color, sound and uniformly hard. The average waste is only one per cent.

The claims made for the "Zig-Zag" type of kiln are, that the loss of heat is reduced to a minimum, and that the heat in the chambers is distributed evenly, while the great length of the fire-travel allows of an intense draught and a quick travel of the fire. Further, through using

a fan to create draught, the heat can be taken from the gases and used to dry the brick, either on drying floors or in a Buhrer drying chamber.

The smoke flue runs down the centre of the kiln, and over it is the heat collecting flue, into which hot air from the cooling chamber is taken by portable pipes, 12 in. diameter, and from which heat can be taken either to the chambers in advance of the kiln or to the drying sheds. By the use of the fan a more intense draught can be obtained than by a stack, and it can be kept at a regular effectiveness, independent of the state of the weather and the conditions of the atmosphere, so that the burner has his draught under control at all times.

The kiln is built in a most substantial manner, and is covered with a roof of lattice timber principals with felt covering. There is very little heat from the top of the kiln from radiation. Everything connected with the working of the kiln, and, indeed, of the whole of the plant at Youghal, is carried out in a most methodical manner, it being evident that Mr. Smyth is a believer in method and order in all things, and that he has trained his employes to do their work in an intelligent and up-to-date manner.



Buhrer Kiln Installed in Tile Works at Pilsen, Bohemia.

EDITORIAL SECTION

Volume XLII. CHICAGO, JUNE 1, 1913 Number 11

What Efficiency Means

Efficiency is a much-used word. You hear it on all sides. The man at the lathe talks about it. The man in the front office slips it off his tongue as if it was some dainty morsel. The employer himself talks it at breakfast, at lunch, at dinner.

Few have more than a vague idea what it means. To hear some discuss the subject one would think it was the tiny bag of gold at the end of the rainbow—an object of chase which is just as elusive as the reward in the fairy tale.

What is efficiency? What is the meaning of the word as applied to the factory?

A strict interpretation of the word shows it to mean **ECONOMIC PRODUCTIVITY**. In other words, the science of taking a certain ratio of energy—a profitable ratio of energy, from a certain machine into which has gone a certain energy.

If a brick machine has received an amount of raw material it should turn that raw clay into a green brick of such quality and quantity as to make the operation profitable.

Its efficiency rating is determined by the cost of the work it **PERFORMS**.

Two machines standing side by side in the same plant and working under the same conditions, each turning out 40,000 green brick a day, may differ in efficiency.

Some flaw in construction in one of these machines may produce twenty per cent more spoiled brick than the other. Certainly, then, this machine has less efficiency than the other.

The same rule is applied to men. Two men of equal skill may be placed on the same work. If one is slower in his movements than the other and moves his arm **TWICE** to perform the same work that the other does with **ONE** crook of the elbow, his efficiency is not as great as the latter.

The highest degree of efficiency is reached when we accomplish the **MOST** with the **LEAST EXPENDITURE** of energy and capital.

Many clay plants, for instance, run only seven months in the year. Their efficiency is impaired at the very start, since they have the burden of a heavy investment to carry, five months in the year, with no effort to utilize the money practically half the time.

Would it not be better to have a smaller capacity and run the plant twelve months than to have a

larger capacity and be forced to shut down five months out of the twelve?

There is no fixed, steady demand for building material. In the early part of the season it may be heavy and then suddenly drop off. In midseason it may leap forward after a season of inactivity and tax the brickmaker to keep pace with it.

Plants are designed—not for a fixed demand, but with the idea of taking care of the rush when a sudden demand is made for increased output.

This means that fifty per cent of the time the plant is operated it is too large for the output and efficiency of that plant must suffer during that period.

Up to certain point each increase in output means a reduction in the cost per thousand. Beyond that the cost of manufacture increases.

Unfortunately this is a problem that is hard to solve. The question of increased labor may be taken care of to a certain extent, but machinery is not so flexible.

Manufacturers in other industries apply the unit system to ascertain the proper efficiency. Each proportion of the manufacture is allotted to a definite number of men, a certain quantity of power, or fuel and a positive amount of machinery.

Managed in this way it is comparatively easy to ascertain the relative efficiency of each pug mill, dry pan, brick machine, dryer and kiln, and arrive at a result that will show the most advantageous output of each part of the plant.

With the opportunity to analyze your plant, would it not be easy to determine whether it would not be profitable to alter your output—even while selling your product at a low cost per thousand, and take advantage of the excess of power over and above what is **LEGITIMATELY** used?

There comes to mind a certain clay plant which has a grinding capacity of 50,000 brick per day but which has a brick machine of only 25,000 capacity. The kilns can take care of 300,000 brick per week.

Now, would it not be reasonable to suppose that it would be more profitable to install a brick machine of **LARGER** capacity in this case and thus get the **FULL BENEFIT** of the power and the fuel used to run the dry pans and the kilns?

A plant that is working **UNDER** capacity is not being worked **EFFICIENTLY**. Idle kilns or kilns that are doing only what a smaller kiln can do, are **WASTEFUL** when compared with their output.

It is obvious of course that it is poor business judgment to make a product for which there is no sale.

It is equally as plain, however, that to operate a large plant on small output is unwise.

Inasmuch as the brick business is a fluctuating business why not install a double-barrel plant—a small and a large one?

Would not the saving in fuel consumption and power justify the expense of the installation of a smaller plant?

In the Winter the smaller plant could be operated profitably. Every ounce of efficiency could be coaxed from the men and the machinery.

In the Summer, when the building season opens, the larger plant could be put into use and the smaller plant permitted to rest.

The proposition to substitute smaller units for the larger may not be practical, but on the face of it one would think that while the **NET** gain will not be so great when the plant is **OVERWORKED**, the losses during the period of depression would be so **REDUCED** as to more than **COMPENSATE** for the curtailed economics in the rush season.

Be a Good
Imitator,
Mr. Clayworker

Originality—the ability to create or to take the initiative, is a very good asset in **ANY** business, but it doesn't necessarily mean that we must be original always just for the sake of being original.

It is better to be a **GOOD IMITATOR** sometimes than to be a **POOR CREATOR**.

A business man who uses an original idea when that idea is a **GOOD** one and who profits by the experience of others when that experience proves of **VALUE** to him is the well-balanced business man.

The brickmaker—and when we say brickmaker we mean the clay products manufacturer as a class, profits less by the experience of others than any other producer.

The steel man decides he is not making his product to the best advantage. He has tried all the machinery that was designed especially for his business and found it wanting.

Does he sit back and say, "Well, that's as far as I can go," and continue to work under the same old conditions?

No, he knows there must be a more economical way of doing things and he leaves the steel industry and scours around among the other industries for ideas. He finds someone using producer gas in a different way than he is using it. He investigates that system and finds it will mean a saving in fuel of a certain per cent each year and he adopts it.

It is this adoption of ideas from others that has made the steel plant a model of efficiency.

Brickmakers have an idea that they must stick to well-established methods and processes and the result is that the industry is half a century behind in progress.

We have in mind one progressive clay products manufacturer who has divorced himself from that idea.

The plant—one of the largest in the country, was destroyed by fire some time ago. When the question of rebuilding came up it was decided that the new plant should be modern in every particular.

Visits were made to every up-to-date clay product plant in the country for suggestions.

Finally it was decided to visit plants in **OTHER** industries with the idea that possibly some valuable suggestions might be obtained.

At an iron ore mine the brick manufacturer found an ore feeder that attracted his attention. He examined its mechanism thoroughly and came to the conclusion that it would be a most valuable piece of machinery for his clay plant.

He looked up the manufacturers and bought one from stock. Not a change was necessary to be made in the feeder and it was installed and today is doing its daily share of contributing to the efficiency of the plant.

This feeder not only does its work better than the men that once fed the dry pans, but it also cuts out the labor of **SIXTEEN** men which means an annual saving in labor alone of more than \$8,000 and the machine cost just \$800.

At a soap factory this same concern found an apparatus that was a marvel of efficiency. When the clayworker saw it he decided it could be used in a clay plant just as well as a soap factory, and shocked his engineer by suggesting a trial.

The apparatus was installed—not a change in its construction being made, and that clayworker increased the efficiency of a certain department fifty per cent!

This sounds like a fairy tale, doesn't it? It is not, just the same. It is the plain, unvarnished tale of a clayworker who left the hide-bound shell of exclusiveness and stepped out into the field of progress and seized practical ideas that had been worked out and proven to be good.

Rub elbows with the rest of the world once in a while. Make it a **FIXED HABIT**. If a soapmaker manufacturer may be able to show you how to **BURN** them. If an ore miner can show you how to cut operating expenses it proves that some of the other industries may offer you equally as valuable suggestions.

Be original as long as your originality produces profitable suggestions, but when you find yourself at the end of your mental string, be an imitator, but—be a **GOOD** one.

The Truth About Cheap Paving

PHOTOGRAPHIC PROOF OF THE IMPRACTICABILITY OF CONCRETE AND BITUMEN ROADS



Dolarway Pavement, Washtenaw Avenue, Grand Rapids, Mich. After Less Than Six Months' Wear.



Wayne County, Mich., Cement Road in Use Less Than Four Years. Cracked Almost Entire Length.



HE Truth About Concrete Paving" could be the subject of a most instructive and interesting pamphlet for the perusal of municipalities which are considering the construction of new streets. Through the energetic efforts of the cement manufacturers many miles of concrete street and highway paving have been constructed throughout the country the past three or four years.

Road commissioners and city engineers have been misled by the attractive cry of "low cost" and plunged into the advocacy of concrete and other so-called "economical" paving materials like the Dolarway or coal tar preparations so vigorously advertised. "Time tells" in paving materials as well as with anything else and the brief life of the concrete and tar street is beginning to awaken these mistaken advocates to the realization that after all true economy BEGINS with the first cost and CONTINUES as the years roll by.

So long as concrete as a pavement material had no history—so long as it was an experiment, there was little to be done in the way of combating it. It has had a history, however, now, and although one, two or three years only has elapsed in those cases which are illustrated in this article, the time is sufficient to show the utter impracticability of concrete or the tar preparations.

It is significant that the cement companies that manufacture the best quality of cement do not advocate the use of concrete in paving. As a matter of fact they discourage the idea and do it because they KNOW its possibilities and its limitations. They realize also that concrete pavement failures are certain to injure the cement business along the lines of its proper use.

Shortsighted persons usually figure economy on the basis of first cost. Likewise, unthinking municipal officials and highway commissioners jump at the conclusion that because concrete or a tar street costs less to construct it naturally follows that it is the CHEAPEST. However, they do not figure seriously on the future cost. With concrete or tar there is the constant expense of resurfacing each year and on heavily used roads even oftener. Take a concrete road ten years old and a brick-paved road of the same age and how would they compare in COST? With the former there would be the cumulative expense each year of resurfacing or repairing. With the latter there would be no expense for upkeep. Brick, when once down, is down to stay and needs no further attention if properly laid at the start.

"Time tells" and it is beginning to tell the truth about concrete and tar as a street paving material. A few more cases like those mentioned above should convince anyone of their impracticability.

New Methods and Processes

A DEPARTMENT OF TECHNOLOGY
WHEREIN RECENT EXPERIMENTS
AND DISCOVERIES ARE EXPLOITED

Edited by

Charles S. Kinneson

Ceramic Chemist, United States Bureau of Standards, Department of Geology

Contributing Editors : Prof. Charles F. Binns, Ellis Lovejoy, C. E., Anton Vogt

In speaking of "Radium Clay" one might suppose that a clay containing radium had been discovered, but obviously such is not the case. The fact is, that it has recently been found out that if clay is incorporated with an extremely small amount of some material containing radium, it thereby becomes radio-active after being burned. It need not be radium that is pure or anywhere near pure, for only a small amount is needed to make the clay radio-active.

To begin with, radium is a material possessing a series of very remarkable properties. For example, its salts glow in the dark and they continually give off heat. Furthermore, radium salts give off three different kinds of rays, which are distinguished from each other by their behavior towards a powerful magnet. Another very remarkable phenomenon exhibited by these salts is the fact that they are electrically charged. And finally, the salts of radium emit a gas, or so-called emanations. It is due to this emanation that radium possesses its so-called radio-activity which is imparted to objects remaining in the neighborhood of the radium for a considerable length of time. But this induced activity gradually disappears.

Almost all of the noted mineral springs, such as Bath and Carlsbad for instance, have recently been found to be giving out very small radium emanations and consequently it has been suggested that the radio-activity of the waters gives them their reputed value. The radium emanations are being constantly changed into the inert gas helium which is not possessed of radio-activity and consequently the radio-activity and healing powers of the water gradually disappear within a few days. Such mineral waters should therefore be used immediately on their issuance from the earth. This means that they are available only to a few. But it is fortunate that medical spring waters in imitation of the famous foreign baths can now be made at home from the city water supply by making it radio-active.

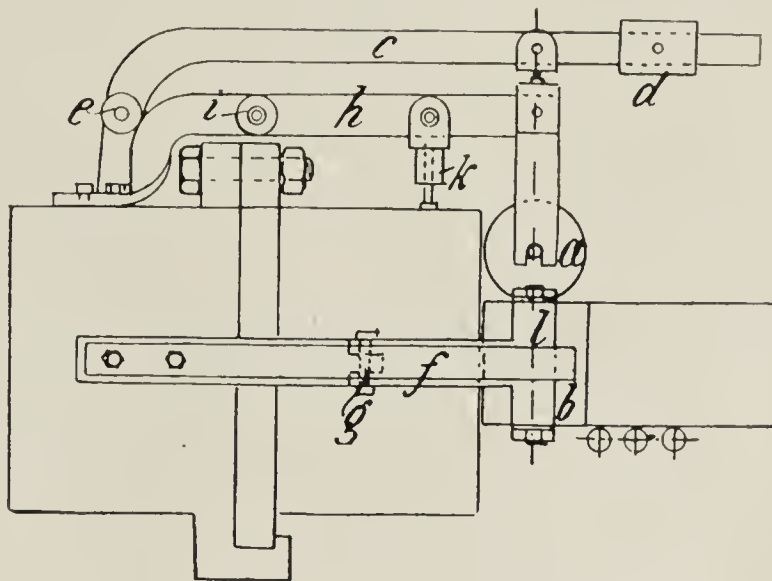
It has been found that certain clays are capable of being media for the transferring of this activity. The clay is not only a cheap carrier of radium, but it also can be fashioned into any desired shape much easier than the natural radium bearing minerals.

The new scheme is to make water tanks or water filters out of burned clay in which has been mixed a small amount of radio-active material. As the water stands in the tank or filter, it in turn becomes slightly radio-active. Salts extracted from any particular spring can be added to complete the imitation.

On the theory that radio-activity may affect the growth of flowering plants, experiments are being conducted by raising them in clay pots that have been charged with radio-activity. Extensive series of tests have shown that the growth is accelerated in a remarkable manner by radium emanations.

The inventor of the radium clay bodies is Mr. Kurt Schmidt, of Freienwalde, Germany.

Since the field of rough textures in face brick is naturally limited by the gauge of the wire, the direction of the cut and, in some instances, by the way the wire is wrapped, an interesting line is opened by the illustration given here, showing a system of producing textures by a series of rollers, upon which are engraved reversed



designs of basket-weaves, etc., to be impressed upon the top and sides of the clay column as it leaves the die.

As will be seen from the illustration, the clay, on issuing from the die *g* is met by a horizontal roller *a*, and two vertical ones, of which only one (*b*) is shown. These rollers are made of plaster and their surfaces are moulded so that they will produce the desired design on the clay. Metal rollers, suitably engraved, may be used if desired.

The pressure on the rolls is regulated by the lever *c*, with a movable weight, *d*, and by a spring, *f*, the tension of which is regulated by a screw at *g*.

The term "conventional" will soon be applied with equal truth to many of the rough faced brick as it has been to the smooth faced varieties. New textures are being sought, but, with few exceptions, the results are freakish. Here then, is a line of thought that should not be dismissed lightly, or put aside on the ground that the product would be "too mechanical." It would seem that the limit had been reached to the varieties of rough faced brick that could be produced with a wire, while there is, practically, no limit to what could be done with rollers.

The division of miscellaneous mineral industries of the Bureau of Mines is conducting some interesting investigations and experiments in connection with the study of the clay colloids and the effects produced by treating them with electrolytes. The purpose of this investigation is to gain some knowledge that may be applied to preventing the loss of substances of economic value in the slimes from plants for washing mineral ores and to devising methods of increasing the plasticity of clays for use in engineering construction. Three methods of attack-

ing the problem are being followed:

1. Observing the effect produced by varying content of water and by varying the concentration of the electrolyte upon the volume shrinkage of clay briquets.

2. The effect of some electrolytes in increasing or decreasing flocculation in clay solutions.

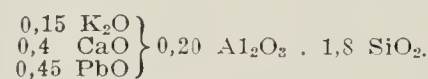
3. The influence of some electrolytes upon the viscosity of clay solutions.

The investigation is being carried on by Robert Back, junior chemist, under the direction of C. L. Parsons, chief of the division.

According to Dr. E. Berdel, an European authority, the following glazes, which mature at a temperature corresponding to Seger cones 2-6, have proved satisfactory in practice:

(a) Felspar	84 parts
Marble or whiting.....	40 "
Red lead	103 "
China clay	13 "
Quartz sand or flint.....	48 "

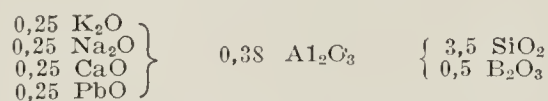
This corresponds to the formula



(b) Frit together	
Felspar	140 parts
Cryst. borax	96 "
Marble or whiting.....	25 "
Red lead	57 "
Quartz sand or flint.....	104 "

Grind the above frit with one-tenth of its weight of China clay.

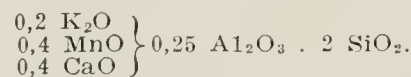
This corresponds to the formula



(c) For a brown glaze the following cheap, leadless glaze is recommended:

Felspar	112 parts
Manganese dioxide	35 "
Marble or whiting.....	40 "
China clay or fat clay.....	13 "
Quartz sand or flint.....	42 "

This corresponds to the formula



It is not advisable to apply these glazes to the green or merely dried clay. The results obtained by burning twice are greatly superior. The first burning should correspond to Seger cone .014-.012, the second or glaze burn to cones 2-6. The quicker the glaze burn the less liability to form hair-cracks or crazing in the glaze.

Colored glazes may be prepared by adding copper or cobalt oxide and other colors to the glaze, or to a body composed of:

China clay	40 parts
Quartz sand or flint.....	40 "
Felspar	20 "

THE CONTROL OF FIRE CLAY.

For the manufacturer of any refractory product, suitable raw materials are necessary and where the only requirement is that they can be worked into the desired shape, very often several widely different materials are suitable. But when it is required to produce an article possessed of definite properties which depend entirely upon the peculiar qualities of the raw material, the choice becomes decidedly limited.

In consideration of the many raw materials available for use in the ceramic industries, tests, which will establish their fitness or unfitness for the product in question are especially necessary.

These tests should be very thorough indeed, if the clay is from a new and untried deposit. This applies especially

to the manufacture of refractory products, because in this case the properties of the finished product depend absolutely upon those of the raw material. To be safe every shipment received should be tested because in the one and the same pit and at different depths in the same deposit, the clay can vary decidedly.

A complete test, however, is impractical because of the time required, but there are preliminary tests which should establish the fitness or unfitness of the clay in question.

For this purpose, a routine preliminary test should be worked out and followed in every case so that the results obtained will be comparable. If the test reveals substantial variations in one or more points, the unfitness of the material is at once established and in doubtful cases a more complete working test should be carried on.

A test that is at once simple but effective in the case of fire clays is one to determine the presence of granular material like sand or mineral fragments. To carry out this test, select samples of say, 2 pounds each at 10 different places in a carload. These are then dried, crushed and thoroughly mixed. The ultimate 20 pound sample should of course be as representative of the shipment as possible. Suppose, for instance, that the car seems to consist of about one-fourth dark colored clay and three-fourths light colored. Then the samples should be so selected that there are about 5 lbs. of dark and 15 lbs. of light colored clay. Then put about 2 lbs. of this ultimate sample into a 4 or 5 qt. vessel and pour over it about half a gallon of hot water. After the clay is thoroughly disintegrated, add enough more water to produce a thin fluid slip. This is then slowly poured thru a 75-mesh screen, and the residue remaining washed with more water until it is free from all clay.

This clay free residue is now dried and weighed and in comparison with the weight of a similar residue from previous shipments will show rather definitely whether there is a variance in the clays.

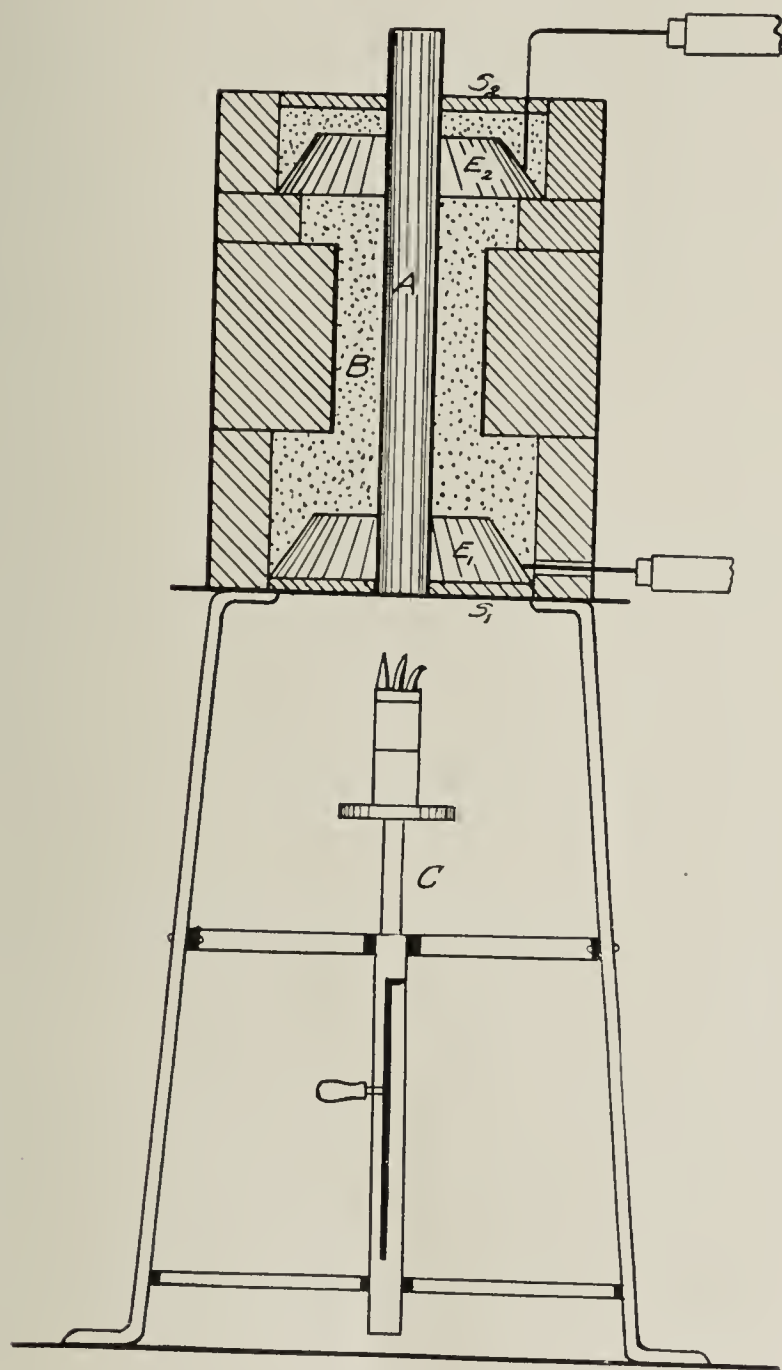
Not only the amount of this residue should be noted, but also the size and character of the granular material. It should be determined, for instance, whether it is merely quartz fragments or whether it is granular lime or pyrites. These last named materials would of course put in question the suitability of the clay as a refractory, and it is important to know of their presence. The presence of the lime as a carbonate can readily be determined by pouring dilute hydrochloric acid over the residue, whereupon effervescence or bubbling will ensue if a carbonate is present.

But of course these impurities may occur in such a state that their presence can only be determined by a chemical analysis. It must be understood, however, that a chemical analysis will not foretell accurately the behavior of a clay towards heat. The only sure way to know its refractoriness is to make a softening point determination.

To make this determination the clay is fashioned into cones of approximately the same size and shape as the well known Seger cones, with which they are to be compared. In plants where current is available the electric furnace offers the best means of making the melting point determinations. This furnace has the advantage that the temperature is under close control and the cones to be tested are always visible.

As shown in the accompanying figure, the heating compartment consists of a refractory tube which stands on a fire clay plate (S_1) and is supported on a suitable iron

plate. The fire clay case surrounding the furnace is made in sections as shown, the upper and lower sections being thinner than the middle one. (E_1) and (E_2) are cone shaped iron electrodes, the conducting wires to which are introduced—one through the bottom and the other through the fire clay, covering (S_2) at the top. The space (b) between the heating tube and the outside casing is filled with granular carbon. The test pieces are introduced from below as shown by means of an adjusting rod (c).



For operating the furnace, a current of 80 volts and 130 amperes is necessary. The feature of this furnace is its efficiency and its simple control. One of this type can be obtained from the Chemical Laboratory for the Clay Industries, Berlin N. W. 21, Germany.

In many plants test pieces are burned in the commercial kilns along with the ware. But this method has two disadvantages. In the first place considerable time must always elapse before the test pieces can be seen and examined; and secondly, it tells very little or nothing concerning its refractoriness. The pieces, after burning, may present a perfectly satisfactory appearance and yet not be sufficiently refractory. To be on the safe side a softening point determination should be made in every case. This in connection with the washing test described above affords a close check on the clay received from time to time and should not be neglected. The results

of the tests should be entered in a convenient note book, where they are always at hand for comparison.

(The preceding remarks have been abstracted from an article appearing in *Tonindustrie-Zeitung*, Dec. 17, 1912.)

CANADA INSTALLS OFFICIAL LABORATORY.

Promises Splendid Plant for Testing Clays and Other Minerals Will Open First Week in July.

Canadian clayworkers and owners of Canadian clay fields will learn with interest of the opening of a modern and well equipped laboratory, for purposes of experimental concentration and metallurgical tests, under the auspices of the Mines Branch of the Department of Mines, at Ottawa. Prof. Eugene Haanel, Ph. D., is director, who announces the following lists of full scale and laboratory size apparatus, which will convey some idea of the magnitude and latitude of the plant:

Standard Size Machinery.

CRUSHING AND SCREENING—One Hadfield & Jenks 12 in. x 8 in. Blake crusher; one Allis-Chalmers 24 in. x 14 in. "Style C" rolls; one Hardinge 4 ft. 6 in. conical ball mill; one Ferraris 6 ft. 0 in. screen for coarse sizing; one Keedy ore sizer, No. 3, for fine sizing; one Duplex Callow screen.

Sampling is provided for by two Standard Vezin machines, placed in favorable position to cut out preliminary samples of coarse materials. The fine material will be sampled by an eight unit system of the Flood automatic samplers.

Provision has also been made for hand sampling by means of the Jones riffled samplers.

All water lines serving standard apparatus will be equipped with Keystone water meters, to enable the keeping of accurate records of water consumption.

AMALGAMATION AND CONCENTRATION—One Allis-Chalmers 5 stamp battery, with 1,250 pound stamps, equipped with a 10-ft. tilting amalgamating table, followed by a Pierce amalgamator. The mortar of this mill may be, if so desired, arranged for inside amalgamation; six Callow tanks, 8 feet diam., for de-sliming and settling; two Richards pulsator classifiers, launder type; one Overstrom sand table; one Deister slime table; one Richards pulsator two-compartment jig; one tandem unit Grondal magnetic separator, for wet separation of strongly magnetic minerals; one Grondal magnetic cobber, with dust collector for dry separation of strongly magnetic minerals; one Ullrich four pole magnetic separator, for either dry or wet separation of weakly magnetic minerals; one Huff electrostatic unit, comprising a standard generator and two laboratory size separators.

Small Scale Apparatus.

One Sturtevant 2 in. x 6 in. laboratory crusher; one Sturtevant 8 in. x 5 in. laboratory rolls; one Sturtevant 12 in. x 24 in. laboratory screen; one Braun planetary pulverizer; one Abbe six jar pebble mill; one gyratory screen (Hoover type), for making dry screen analyses with nested screens; one Richards combined laboratory pulsator jig and classifier, with glass side; one Grondal laboratory magnetic separator, for either dry or wet separation of strongly magnetic minerals; one Wilfley table, 24 in., laboratory size; one laboratory cyanide plant of 200 pounds capacity, consisting of a Parrel agitator and air pump, with the necessary solution, zinc, and sump tanks; two laboratory filter presses; one complete set of I. M. M. standard screens; one complete set of Tyler standard screens, after the Rittinger scale.

It is expected that the plant will be ready for operation by the first week in July, 1913, and the installation of an experimental roasting and sintering plant will be undertaken some time during the year.

Questions and Answers

A DEPARTMENT FOR THE SOLUTION OF THE KNOTTY PROBLEMS CON- FRONTING THE CLAY WORKER

This department was inaugurated to be of material benefit to the readers of "Brick and Clay Record" and no charge is made for the service given. The advice of the world's recognized authorities in ceramics is offered to clayworkers who are invited to avail themselves of the opportunity to have their problems solved here. Should a reply be desired by letter enclose a stamped and addressed envelope for reply.

Proportionate Kin and Stack Area.

103. *Missouri—I noticed a question in your February issue regarding the proportion of stack area to kiln area. Did any one answer this question? If so, will you put me in possession of the information?*

The correct area of the stack, as compared to the area of the kiln, is somewhat over one-third stack area (figured in cu. ft.) to the kiln area (figured in sq. ft.), as, for instance, in a kiln 30 ft. in diameter, we have an area of 732.62 sq. ft., one-third of which is, approximately, 243. It is well to increase this number, and, going to a stack 3 x 3 ft. in the clear and 40 ft. high, we have a draft area of 360 cu. ft. A stack of these dimensions is larger than needed at the finish, but is needed in watersmoking and oxidation.

Has Trouble Getting Uniform Burns.

99. *Minnesota—We have ventured into the face brick business and experience some trouble in getting the right color. Our clay will have a yellow or buff color at 2000 degrees F. when we get the heat to 2200 F. the clay vitrifies and gets a dark brown or black color and the brick will have a glaze similar to a salt glaze. Now, if we could be able to get the same result every time we would be pleased, but sometimes the burn will get a yellowish green and sometimes the dark brown or almost black. Now, I wish that some of your readers would put me on a way to get the dark effect every time. How is a reducing fire handled so as to get a dark color every time on the ware? We are burning in down-draft kilns, a coking table fire-box is attached with grates; kilns are 30 ft. in diameter. I should like to hear through your valuable columns or by mail, and would appreciate an answer very much.*

Our correspondent undoubtedly is dealing with a limey clay which largely predominates in the northwest, particularly Wisconsin and Minnesota. These clays contain both lime and iron and the color result from the kiln is a battle royal between the lime and the iron.

The matter that surprises us is that he can burn these clays to vitrification in any quantity in a commercial kiln. A little lime does no harm. A certain amount of lime affects the burning range very seriously and such clays have such a short burning range that they are very difficult to burn let alone vitrify. While lime acts as a flux through a range of temperatures, it is not very active until a certain critical temperature is reached, then it acts quickly and to the full amount in the clay with the result that a brick made of limey clay passes quickly from a soft product to a fused pasty mass, and this fusion point is where vitrification begins and instead of a vitrified product we have a swelled spongy mass.

When lime is in excess (we have seen bricks made from clays containing more than 30 per cent lime), it being refractory and in such excess that it cannot flux with the clay mass in sufficient quantity to soften the entire

mass, the product is a soft brick even at temperatures far in excess of commercial kiln heats.

To return to the question of color: The red color of a brick is due to iron in the clay and as the temperature increases the red gets darker and darker.

So long as the color is red, the iron is not in combination with the clay, and the burned clay is simply colored with the naturally red oxide of iron. When the iron begins to combine with the clay, dark iron alumina silicates form which, when all the iron is absorbed, or rather in fusion, if the latter, is in sufficient quantity, may be black. All are familiar with the iron spot bricks in which the black iron spots are simply iron silicates.

When an entire brick approaches an iron spot condition it may be black. As the iron passes from the free red colored state into the fused condition, the brick changes from a red to a brown increasing in darkness until the black is reached if there be sufficient iron.

Iron in the red (ferric oxide) state cannot enter into combination and it first must be reduced to a ferrous oxide and for this reason when we wish to make gun metal bricks we must have, at least part of the time, a reducing condition in the kiln—a condition in which the gases of combustion not being able to get oxygen in sufficient quantity from the air admitted through the furnaces will take it from any oxide minerals in the clay and thus these oxides are reduced and the remaining mineral put in condition to combine with silica, etc.

Lime introduces another condition. The lime combines with silica even more readily than iron especially under oxidizing conditions and as soon as the lime begins to combine it takes up some of the iron, more and more as the heat advances, and a lime iron silica is formed. The color of a limey clay brick which also contains iron will be pale red at a low heat (soft brick) passing into a buff, a greenish buff, a green, to a dark green, even a greenish black if the percentage of iron is high.

What our correspondent wishes to do is to get the effect of the iron under reducing conditions without having it mantled by the effect of the lime. We doubt if it can be done. One would think that it might be possible to maintain a strongly oxidizing condition in the kiln which would prevent the absorption of the iron but not of the lime and when the lime had been taken up, that by a sudden and strongly oxidizing condition the iron might be sent into combination without being completely mantled by the lime, but we doubt it. The lime silicate formed during the oxidizing fire would be more greedy for the iron than any free silica and we get the green lime iron silicate instead of the black iron silicate.

We are inclined to think that the variation in color which he gets is largely due to variations in the content of iron and lime in the clay. When iron predominates, the black color will prevail, and when lime is the more prominent mineral, he will get the green. So delicate

is the balance between these two minerals and so sensitive are combinations of them to changes in temperatures and kiln conditions, that we do not believe he can control the color in such a crude furnace as a brick kiln.

There are three ways in getting reducing conditions in a kiln and each gives a different color effect. One way is to fire with clear open-fires up to within a few hours of the finish of the burn, then change to a reducing fire (smoky). Another way is to fire several hours oxidizing alternating with several hours reducing throughout the burn, ending with a reducing fire.

Another method is to fire with a smoky flame and weak draft throughout the burn to within a few hours of the finish and then to top off with as strongly reducing condition as possible yet at the same time have as strong draft as possible.

We have seen some remarkable effects from burning with choked draft and incidentally it may be mentioned that it greatly tends to bring out the colorific power of iron. We have no idea what effect it would have on a lime iron clay.

Developing a Shale Bank.

98. *Minnesota*—As I would like to do some experimenting with my bed of shale and not having any experience in the business, will take advantage of your service bureau. Could I get a small machine that I could make a small-sized silo block or hollow block of different description? How small could I build a kiln that would be all right to burn these brickletts or hollow ware? (I have the down-draft in mind.) Could you give me the diameter of kiln, grate surface and size of stack? I wish to burn wood if possible. The expense of this must be limited. Could I also get a hand dry press for small brickletts? What would be the most cheap and effective way of grinding material?

We do not think it practical to secure a small machine for making sample silo block, as the expense of making and burning same will be prohibitive. You might submit some of your clay to one of the large manufacturers who carry an ad with our journal. We understand that they have all the necessary equipment for making thorough tests and there is no charge in connection with same. If, however, you prefer to carry on tests independently of the manufacturing companies you might arrange to have it done by some of the various universities that have ceramic departments. The New Jersey State College, at New Brunswick, N. J., the University of Illinois and Ohio University all have facilities for work of this kind.

Wants a Transparent Glaze.

96. *Pennsylvania*—Could you give me a formula to make a light, clear, transparent glaze that would not craze or break after burning on pottery ware, or does your "Glazer's Book" by E. L. Raes give a formula?

It is impractical to suggest any one formula for a glaze that would prove satisfactory under all conditions; the clay or ganister and other "plastic" or "grog" material, the methods of manufacture, the character of the fuel and the firing heat all have an intimate bearing on the matter. To obtain a perfectly fluxed glaze, agreeing properly with the clayware in its coefficient shrinkage and so have no tendency to shell off or craze, and yet be so vitreous as to resist liquids and gases after firing, necessitates a series of experiments in which the character of the ware you propose making, the material you have at hand and the processes you will be compelled to use, may be taken as basic or fixed proportions.

Having tried one or more formulae unsuccessfully, a

record of the component parts of the glazes tried and a description of the result after firing would serve an expert ceramist to diagnose the trouble and suggest that the adding or omitting, increase or decrease of certain constituents would aid you.

In addition to this he would have to be in possession of complete data regarding the character of your clay and a clear knowledge of what you wanted to produce so that he might build his theories on a sound basis. If you will furnish us with this data we will submit your problem to the best authorities and doubtless be able to give you the formula you require.

Mortar Joints for Interior Brickwork.

120. *Illinois*—We have a customer who is contemplating the decoration of an interior room with rough brick. Can you give us any information in regard to the size and style of mortar joints?

Width, grain, finish and color are the four factors in mortar joints that determine the texture of the finished brickwork. Width and color are the two factors that determine the general color-tone. The influence of the width of the joint on the finished work can be appreciated when it is understood that, with a brick $2\frac{1}{4}$ in. thick, a quarter-inch joint constitutes 10 per cent and a half-inch joint 18 per cent of the finished wall surface. So the design of the brick work and the color of the mortar that is to be used must both be taken into consideration in fixing the width of the joint. It is a question of weaving an imperishable fabric with threads of varying thickness, the brick being of one measurement, the joint another.

Harmony of the surface, so that each plane of the finished work will give back the same light, demands that the grain of the joint should be the same as the grain of the brick—that is, of equal coarseness. This is given by adding gravel to the sand used in the mortar, a good formula being 10 parts sharp building sand, 4 parts gravel, 2 parts Portland cement and 1 part lime putty. The gravel should be through a quarter-inch mesh screen. On account of the large proportion of cement in this formula, it is necessary to use more coloring matter than would be used in lime mortar and the mistake that most builders make is to accept the color of the wet mortar with the feeling that "it will dry out a little lighter"—the fact is that "it" dries out a great deal lighter, and a good rule for interior work is to put in "enough" mortar color and then put in about half as much again.

If the mortar is mixed properly and only enough water added to make it work stiffly, it will not run down over the surface of the brick. Remember, mortar stains on rough finished face brick are very hard to remove. It should feel "rubbery" to the trowel and, if the bricklayer has not laid up rough finished face brick in interior work before, he will be apt to object to the extra "poorness" of the mortar. If he does not "kick"—look out—the mortar is too fluid and will be apt to soil the work.

Finish the joints either "rough struck flush" by striking up with the edge of the trowel, in the same way as common backing up work is struck, or "rake" with a wooden Dutchman. This latter is a wedge shaped piece of wood, the edge being slightly narrower than the width of the joint. The soft wood leaves a surface on the joint that is immeasurably superior to the surface left by any metal jointing tool.

The color must be chosen with relation to the color of the brick and to the color-tone of the finished work. The formula given above produces a grayish-white joint and is made warmer by the addition of enough yellow ochre to make the wet mortar a deep lemon. This will dry out a rich cream. By adding half double-strength brown and half black, a dark brown is obtained in the wet mortar, that changes, through

the action of the cement, to a grayish-purple when the joint is thoroughly dry. Do not use black alone, in any mortar to which cement is added, as the latter forms a film around the black particles and turns them to a whitish-blue in spots where the moisture has been greatest. Any of these joints are good for shale brick—half brown and half yellow color is excellent for fire clay brick in shades from orange to dark brown. Do not use red color alone. Add some black to your white mortar, if no cement is used and so "vaccinate" against the dinginess of the joint as dust and dirt accumulate.

Cannot Divert Gas Fired Kilns.

119. *Kansas*—We want some information about kilns that are fired from the top only. We understand the Hoffman kiln is this type. Would also like to know where we can see such kilns in operation and any other information you can give us about them. We have several up-draft kilns originally built for gas that are too close together to operate successfully with coal from the side and would like to divert these kilns into some type of a down-draft kiln or continuous type fired from the top and to be used in the burning of dry-press brick.

There is a Hoffman continuous kiln, fired from the top only, in Hastings, Neb., and our correspondent will do well to investigate it. The up-draft kilns described could not be converted into down-draft without dismantling every other kiln, in order to gain room for coaling. There are no down-draft kilns fired from the top only.

Wants Directory of Potters and Tilemen.

112. *Kentucky*—Can you inform me whether there is a directory issued of firms and individuals engaged in the manufacture of pottery, art-tile, sanitary ware, etc., in the United States? If there is such a publication state where it can be obtained and what price.

We refer our correspondent to the Mantel, Tile & Grate Monthly, 87 Arcade, Utica, N. Y.; the Pottery & Glass, 395 Fourth Avenue, New York; Crockery & Glass Journal, 92 West Broadway, New York City; Pottery Glass and Brass Salesman, 76 Park Place, New York, and China, Glass & Lamp, 121 Fourth Avenue, Pittsburg, Pa.

Wants Powdered Burned Flint.

122. *Georgia*—Will you kindly give me the address of parties dealing in mineral supplies for fancy clay trimmings? We want to buy powdered burned flint.

This correspondent's name and address was sent out in our "Service Bulletin" of May 20, and we hope that, by this time, one or more of our advertisers have communicated with him.

Printers' Ink to Fight Fire.

95. *Indiana*—Where can I get copies of some of the pamphlets on building with brick? I got a few at the Clay Show last year, entitled, "Relative Cost of Building Material," "Sparks from the Fire Waste," and "Why Prague Fire Losses are Light." I would like to have about a thousand of each.

The Building Brick Association of America issues most of the booklets referred to. Address H. Jerome Lee, Secretary, Flat Iron Building, New York City.

Crushing Tests on Hollow Tile.

94. *Arkansas*—I wish to have tests of the crushing strength of my brick and hollow building tile and will thank you to give me the name and address of parties who do this.

The department of clayworking and ceramics at Rutgers College, New Brunswick, N. J., or of the University of Illinois, at Urbana, Ill., will give you satisfactory service for a fee that will depend upon the severity of the tests required. The U. S. Bureau of Standards at Pittsburgh, Pa., will begin making exhaustive tests of hollow building tile in the near future and preliminary correspondence with them would probably be of value to you.

93. *Minnesota*—Will you kindly give me the address of one or more firms from whom I can purchase a glaze and materials for making glazes to glaze a cheap grade of pottery?

The required addresses have been sent the correspondent.

Brick Machinery Catalogues.

97. *Cuba*—Will you kindly ask one or two manufacturers of various classes of brick making machinery to send me a catalogue? I have found another body of clay very different from the samples which I sent you recently and which I believe will work out all right. I am making a test burn now. If it will make brick I will have to get crushing machinery as it contains a lot of rock and gravel too large to put into a brick. I shall want to start small at first, say making probably five to ten thousand per day. Would write direct to various firms if I had the addresses but have nothing but a ten-year old "Brick" to get addresses from. Will subscribe for "Brick" and buy literature as soon as I know where I am going to locate.

We have referred your request to our advertisers and no doubt you will hear from them at an early date.

Imitation "Harvard" Headers.

123. *New York*—We manufacture red building brick, by the soft mud process, and would like to make some black end brick, commonly known as "Harvard" headers. Can you give us any information as to how to make them? We thought that by dipping green brick in some chemical solution and then burning, we might produce the black end.

We do not know of a single instance where the "Harvard" greenish-black, wrinkled header has been produced artificially, with commercial success. If any of our readers know of a case and will let us know how it was done, we will be grateful, and glad to publish the information for the good of the craft.

Brick Plants in Illinois.

125. *Manitoba*—We are desirous of getting a list of the pressed and common brick manufacturers in Illinois as we can use a large amount of brick from that state.

Mr. A. E. Huckins, of Champaign, Ill., is secretary of the Illinois Clay Products Manufacturers' Association, and will doubtless furnish you a list of the members of that organization, which includes the majority of clayworking plants in Illinois.

Burned Clay for Railroad Ballast.

126. *Alberta*—We have a prospective customer who is interested in burning clay for railroad ballast and have written several advertisers in "Brick and Clay Record" to secure particulars of existing plants, also regarding machinery to operate same, but have not been successful in locating anyone who makes a specialty of this type of machinery.

The Chicago Brick Machinery Co., of 20 West Jackson Boulevard, Chicago, Ill., have installed two outfits on the Santa Fe and Missouri Pacific Railways and one of their representatives is now in Texas putting the machinery in action. Several photographs have been taken and we hope to give these plants a special write-up in an early issue.

Brick Magazines and Text Books.

128. *Texas*—Please send me a list of publications devoted to brick manufacturing and of firms manufacturing brick-making machinery.

We refer our friend to the list of books we publish on the subject of brickmaking which appears in our advertising pages. Evidently our correspondent is just entering the clay industry and if this be true, "Modern Brick-making" will prove valuable to him. To the other question, we refer him to the advertising pages of this journal.

The Superintendent

A DEPARTMENT CONDUCTED FOR THE INTERCHANGE OF IDEAS IN METHODS OF MANUFACTURE

Contributions from our readers are solicited for this department on any subject pertaining to the manufacturing end of the industry. Short cuts and labor-saving suggestions are particularly sought. Address all communications to the Editor of the Superintendent Department, Brick and Clay Record, Chicago.

Frequent complaints by manufacturers of brick and terra cotta of white scums and discolorations have brought repeated reference to the use of precipitated carbonate of barytes in these columns. One of "Brick and Clay Record's" advertisers sends out the following advice as to the best way of using carbonate of barytes:

"Carbonate of barytes, when mixed with the clay in such portions as experience shows necessary, combines with the sulphate of lime or gypsum and when these are brought together in the presence of moisture and heat, a chemical change occurs wherein are formed insoluble sulphate barytes and insoluble carbonate of lime, thus rendering harmless the causes of the scum.

"The amount of carbonate barytes needed to prevent this scumming or discoloration depends altogether on the amount of impurities contained in the clay and water used, which can easiest be ascertained by analysis. For those who prefer to make trials, we would suggest the following experiments:

"Prepare your clay in the usual manner, with usual clay and water, and weigh sufficient clay to make 10 to 15 brick, divide this in five lots of equal weights, each enough for two or three brick, and add carbonate of barytes to each lot, by sprinkling it evenly over and mixing it well in, in the following proportions:

To sample lot, 1, add carbonate barytes in proportion of 1 oz. per 28 lbs. clay.

To sample lot, 2, add carbonate barytes in proportion of 2 ozs. per 28 lbs. clay.

To sample lot, 3, add carbonate barytes in proportion of 3 ozs. per 28 lbs. clay.

To sample lot, 4, add carbonate barytes in proportion of 4 ozs. per 28 lbs. clay.

To sample lot, 5, add carbonate barytes in proportion of 5 ozs. per 28 lbs. clay.

"Then treat the material in the usual way, and mark the different lots 1 to 5 before they go to the kiln. As the brick are taken from the kiln, their appearance will at once show within which limits the necessary quantity of carbonate of barytes is. For instance, if lot No. 2 is not quite free from scum, and No. 3 is free but not so good in color as No. 4 or No. 5, then the quantity of carbonate barytes required would be that used for No. 4 or No. 5. Once the necessary quantity is ascertained matters can be simplified by figuring out the requisite amount required per truck or barrel load."

Considering that the preventative is so simple and so easily obtained, and that its cost is far from being prohibitive unless a large quantity is necessary, it seems as though brickmakers should do away with scumming, the most serious defect a brick can show. Carbonate of barytes sells for 23/4c to 3c per lb. Figuring that 28 lbs. of pugged clay will make 4 brick, 250 ounces of barytes would be required for 1,000 brick, if the quantity shown in sample lot No. 1 were sufficient. This would cost between 43c and 47c per M. brick, according to the quantities of barytes bought at one time. Increase the amount of barytes used, and, naturally, the cost per M.

brick is increased, until, with sample lot No. 5, we have between \$2.10 and \$2.35 per M., a rather stiff addition to the manufacturing cost.

BOTTLE GIVES HOMELIKE TOUCH.

Dispels Cheerlessness of Noonday and Midnight Meals Amid Kiln Fires.

Much thought is given to labor saving devices in connection with clayworking plants, but the time comes when man-saving inventions are brought to light and anything that adds to the cheerfulness of the noon-hour or midnight meal-time is worthy of record. The smoke and grime of the brick or tile plant make it an unwelcome neighbor and it is seldom that the homes of the men employed, from manager down, are near enough to make possible more than two trips a day—one going and the other coming back, home. The noonday and midnight meal must be carried and put up lunches lack one important homelike quality in that they omit the fresh steaming cup of coffee. The attention of "Brick & Clay Record" has been called to the enterprise of a manufacturer who makes a bottle that not only keeps hot liquids steaming hot for 24-hours but has provided a lunch kit, in which the bottle fits. Needless to say the kit is complete in every way, keeping food fresh and moist and insuring a homelike meal, with a "fresh made" cup of coffee, many hours after the food was packed and the coffee poured from the coffee-pot into the bottle. This is no exaggeration—the coffee retains the home-made flavor and is really "fresh made" so far as taste and warmth is concerned. Both bottle and kit are sold at so reasonable a price that they are worth many times the money in the great convenience and service given, and the bottle is protected from breakage, so with ordinary care, should last a lifetime. The illustration shows one that sells for \$1.50 and the lunch kits sell for from \$2.00 up; they can be obtained from the Icy-Hot Bottle Co., 123 West 2nd St., Cincinnati, Ohio.



Managers of clay working plants that carry accident insurance or come under one or the other of the recently enacted state employers' liability laws will be interested in the definition given "accident" by the compensation bill that recently passed both houses of the Minnesota legislature. This reads as follows: "The word 'accident' as used in the phrases 'personal injuries due to accident' or 'injuries or death caused by accident' in this act shall, unless a different

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Cost less to purchase, install and operate than any other type of brickyard pump. They handle gritty water and never need lubrication.
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PERFORATED METAL SCREENS

As required for
**BRICK
MAKERS
USES.**



New York Office
Room 1028 Cortlandt Building

Manufactured
by
HENDRICK MFG. CO.
CARBONDALE, PA.

meaning is clearly indicated by the context, be construed to mean an unexpected or unforeseen event, happening suddenly and violently, with or without human fault and producing at the same time injury to the physical structure of the body."

Uses Bat for Road Work.

Many brick plants find a good profit in crushed bats, disposing of all badly warped and broken brick for road work. The material produced has no equal for this—particularly when used for road building. The great Barbour farm, near Akron, Ohio, is taking large quantities of broken tile for road building purposes and so making a market for otherwise waste material. Interest your local road commission in this by-product of your yard and you will add to your bank account what you now put on the dump heap.

Who's Who in Clayland



GEORGE H. CLIPPERT,
Detroit, Mich.

A very important part of the business transacted at the recent meeting of the board of directors of the Builders and Traders Exchange of Detroit, Mich., was the election of George H. Clippert to the presidency. Mr. Clippert is a prominent manufacturer of common brick and supplies a large part of Detroit's demand. His is one of the largest plants in that city and one of the oldest, having started in 1889. At that time he operated a small plant near the point where the present buildings are located, the site being, at that time, in an otherwise uninhabited forest. Lack of modern machinery made brick-making a difficult craft a quarter-century ago and looking back, Mr. Clippert has seen many changes in methods and processes, all tending to lighten the brickmaker's art.

Today he operates two plants, with a capacity of 170,000 per day and has an annual output of 50,000,000. A recent purchase gives him additional clay land and plant No. 3 will be started shortly, giving an additional capacity of 100,000 per day. This will make the company that Mr. Clippert heads, the largest producer of common brick in the state of Michigan.

Face Brick

When the American Face Brick Association limited its membership to men who were primarily engaged in the manufacture of face building brick, it tacitly closed its doors to those equally interested, although in a different way, in the same commodity. It made necessary, it is claimed, an organization of men "primarily engaged" in the selling of face brick, and as a result, the Face Brick Dealers' Association of America was organized at a meeting of about a score of dealers from Ohio, Indiana, Illinois, Michigan and New York, which met at the Chittenden Hotel, Columbus, May 22. The organization is the result of a movement started at Chicago at the time of the Clay Show last March when a committee of two was named to draft a constitution and by-laws. At the May meeting the constitution and by-laws were adopted and steps were taken to secure a larger membership, made up of dealers in all parts of the country. F. Lawson Moores, of Cincinnati, Ohio, was elected president; A. B. Meyer, of Indianapolis, Ind., E. T. Knight, of Buffalo, N. Y., W. S. Thomas, of Detroit, Mich., Owen Tyler, of Louisville, Ky.; Herman Matz of Chicago, Ill.; and L. W. Gaddis, of Columbus, Ohio, vice presidents. R. L. Queisser of Cleveland, Ohio, was elected secretary-treasurer. Before adjourning, the new association voted to hold its annual meeting at the same time and place as the American Face Brick Association, in order that matters of mutual interest may be conveniently handled and disputes, if any, settled without unnecessary delay.

Brick made by the Golden-Fairview Brick Co., of Golden, Colo., is being used to face a large and expensive apartment house in course of erection on Lake Shore Drive in Chicago. This is the first time in the history of the clayworking industry that Colorado-made brick has been used in work of this character in the metropolis of the middle west.

Natural gas troubles in the Kansas "belt" have been overcome by a large number of brickmakers, most of whom have been compelled to take up either coal or oil as fuel. The field has proven a fertile one for the producer gas people, and from all accounts the results given are satisfactory. Complaints have been made over the tremendous increase in cost—fuel now costing two and a half times what it did two years ago and labor having gone up to nearly half again as much as it was in the past. The brick plants seem to see their way clear to a prosperous future, however, and are starting up, many with increased capacity, the aim being to reduce overhead expense by increasing the output.

REPORT EXPLODES "HIGH COST" OF BRICK.

Boston Chamber of Commerce Gives Some Figures that Show General Idea is a Fallacy.

The report of the committee on fire protection of the Boston Chamber of Commerce included some very interesting figures on the comparative cost of frame and brick construction for dwelling houses. The conclusion was that the slightly greater cost of brick, which averaged under 10 per cent more than frame, was more than offset in a few years by the lesser cost of maintenance and insurance and by the greater comfort and durability of the structure. The reports says that when lumber was cheap and brick was more expensive than now, the idea became general that the cost of brick as compared with frame was almost prohibitive, and this continues,

St. Louis Vitrified & Fire Brick Co.

Manufacturers of

Fire Brick, Zinc Furnace Lining,
Cupola Blocks, Locomotive Lin-
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FIRE CLAY GOODS of ALL DESCRIPTIONS

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Evens & Howard Fire Brick

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QUALITY, PRICE AND SERVICE

We will be pleased to furnish complete information and quote prices on request.

EVENS & HOWARD FIRE BRICK COMPANY
SAINT LOUIS

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Chicago Retort & Fire Brick Co.
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Fire Brick for all types of kilns.
For burning all kinds Clay Products.

**For Side Walls
For Crowns
For Fire Arches
For Perforated Bottoms**

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We are ready to serve you.

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Cedar Crest Clay Mines

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Mines:—Cedar Crest, Ocean County, New Jersey

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Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

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Philadelphia Office: Pennsylvania Building

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Dover and Buckeye Fire Brick

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Cleveland, Ohio

although the conditions have changed so radically that the cost is now little more and the ultimate cost is less.

The purpose of the investigation was to encourage the use of brick and non-combustible interior construction for the purposes of fire prevention, and this form of building was very strongly urged by the report. Bona fide bids were secured from five different contractors of good reputation on the cost of the construction of dwellings of brick, wood, cement and hollow blocks, the houses to be the same in every particular except the outer walls. Bids were secured on a modern, eight-room house, of good design and excellent arrangement, such as is frequently built in and about large cities, and on these the bids of the five contractors varied comparatively little, and so the average was taken as a fair test of the practical cost, the contractors including their profits in all cases. The average bid for the various types was as follows, the second column showing the percentage of excess cost of each type over the clapboard type:

Clapboard	\$6,759.95	.0
Shingle	6,868.80	1.6
10-inch brick wall, hollow	7,372.48	9.1
12-inch brick wall, solid	7,641.00	13.0
Stucco on hollow block	7,187.65	6.3
Brick veneer on hollow block	7,483.16	10.7
Stucco on frame	6,952.90	2.9
Brick veneer on boarding	7,226.44	6.9
Brick veneer on studding	7,153.98	5.8

The committee corresponded with contractors in various parts of the country in making up its report, and found from them that brick buildings were commonly estimated to cost 10 per cent more than frame, while brick veneered buildings could be put up in many sections for 5 per cent more than the cost of frame buildings, the difference in cost being usually more than offset by the lessened insurance premium. In the same way estimates were secured on annual cost of maintenance, including depreciation, for frame and brick dwellings, and it was found that the frame dwellings cost 26 per cent more for maintenance and depreciation than brick dwellings.

A number of Cincinnati, O., capitalists have bought about 200 acres of clay lands near South Webster, O., and will develop the property at an early date by the erection of a brick plant thereon.

A Pennsylvania charter has been granted the Builders' Brick Co., of Philadelphia, which was incorporated by Calvin S. Galbreath, Rowland H. Hazard and Robert G. McDougal, of Philadelphia.

The Claycraft Brick Co., of Columbus O., has bought the Ohio Mining & Manufacturing Co.'s plant at Shawnee, Ohio, and will operate it on a more extensive scale than has been possible under the old conditions, which included receivership.

A meeting of the Ohio Face Brick Manufacturers' Association was held May 23 at the Chittenden Hotel, Columbus, Ohio. A number of routine matters were discussed and action taken.

The Cleveland Face Brick Association, organized for the purpose of promoting the increased use of brick, is doing much, in common with similar organizations in other cities, to educate the home builders in the advantages of brick. It is the claim of building contractors that the effort of the brick men is having its effect and there is an increase in the number of brick houses being erected.

William J. Condon, of Boston, formerly connected with Fiske & Company, Inc., and its predecessors for twenty-five years, reports his first year's entry into the face brick business as being very successful. Among the large contracts he secured were the High School of Applied Arts, Roxbury, Mass., theatre buildings at Holyoke, Mass., and at New Britain, Conn. churches at Webster, Newbury and Belmont, Mass., a town hall at Bethlehem, N. H., a public library at East Boston and numerous business blocks and apartments throughout New England.

Common Brick

It is difficult to realize the enormous quantities of brick used annually in Greater New York. During 1912 there were more than 1,000,000 thousand used. The principal source of this vast quantity is the Hudson river region, which extends along both sides of the river from New York City to Cohoes and embraces ten counties, nine in New York and one in New Jersey. Other sources of supply are the Raritan river region of New Jersey and Connecticut.

The year 1912 was one of unusual interest in the Hudson river region. It opened with an increasing demand for brick, and the price for common was \$7 a thousand compared with \$4.25 in 1911. For several years the use of cement or concrete construction appeared to be displacing brick to some extent, but owing to the strong "back to brick" movement the year 1912 saw in the New York market a change favoring brick as the best building material for many purposes.

The marketed product in 1912 was larger than that of 1911, and probably would have been still greater but for the scarcity of labor, especially at Haverstraw, and the strike among the brickmakers in the Newburgh district. The strike, however, was of minor importance, as it was of short duration, but the scarcity of labor, due to the great number of men drawn away by large construction enterprises, such as the Catskill aqueduct, railroad extensions, and subway operations, was a serious drawback to the Hudson river brickmakers in 1912. This condition was so serious that the operators resorted to night work and rainy-day work in loading barges, and imported laborers from the South.

An important development during the year was the large increase in the use of Raritan river brick in New York City. For some years New York City has been drawing on the Raritan river region for brick, but in 1912 the demand for this brick was very much greater than ever before.

The statistics gathered by Jefferson Middleton of the United States Geological Survey show the number of brick marketed in the Hudson river region in 1912 at 1,019,259,000, valued at \$5,850,770 or \$5.74 per thousand, as compared with \$926,072,000 brick in 1911, valued at \$4,717,633, or \$5.09 per thousand. This was an increase of 93,187,000 brick and of \$1,133,137 in value. The number of operating firms reporting in 1912 was 126. As in other branches of the clayworking industry, the number of active firms reporting is not equivalent to the number of yards, as many firms have more than one yard.

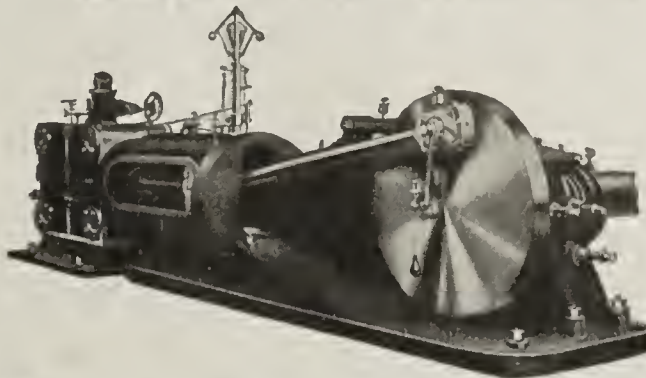
The following table shows the production and value of common brick along the Hudson river in 1912, by counties:

Production of Common Brick in the Hudson River District from Cohoes to New York City, in 1912, by Counties.

County.	Number of Operating Firms Reporting.	Common Brick, Quantity, Thousands.	Value.	Average Price per Thousand.
Albany	12	71,600	\$ 436,626	\$6.10
Columbia	7	70,866	354,589	5.00
Dutchess	18	129,860	765,788	5.90
Greene	6	34,708	196,888	5.67
Orange	9	116,304	660,089	5.68
Rensselaer	5	15,760	85,797	5.44
Rockland	27	207,796	1,221,428	5.88
Ulster	24	259,480	1,458,554	5.62
Westchester	8	62,390	363,098	5.82
Total for New York portion of district..	116	968,764	\$5,542,857	\$5.72
Bergen Co., N. J.....	10	50,495	307,913	6.10
Grand total	126	1,019,259	\$5,850,770	\$5.74

New York's portion contributed about 95 per cent of the quantity and value of the region. The increase in New York in 1912 over 1911 was 103,254,000 brick and \$1,165,321.

POWER PLANTS COMPLETE CORLISS ENGINES, WATER-TUBE AND TUBULAR BOILERS



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CERAMIC ENGINEERS
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GEOLOGICAL EXAMINATION OF PROPERTIES
CLAY TESTING
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DRIERS, FURNACES, KILNS
REMODELING OLD PLANTS GIVEN SPECIAL ATTENTION
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The Department of Clayworking and Ceramics.

Established by the Legislature in 1902 at the New Jersey
State College, Rutgers College, New Brunswick, N. J.

Two courses have been provided: The regular course
of four years; a short course of two years designed
for the young man who has had practical experience
in clayworking.

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Exclusively Manufacturers of First Quality Light Steel
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Offices:
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All Sections from
12 lb. to 40 lb.
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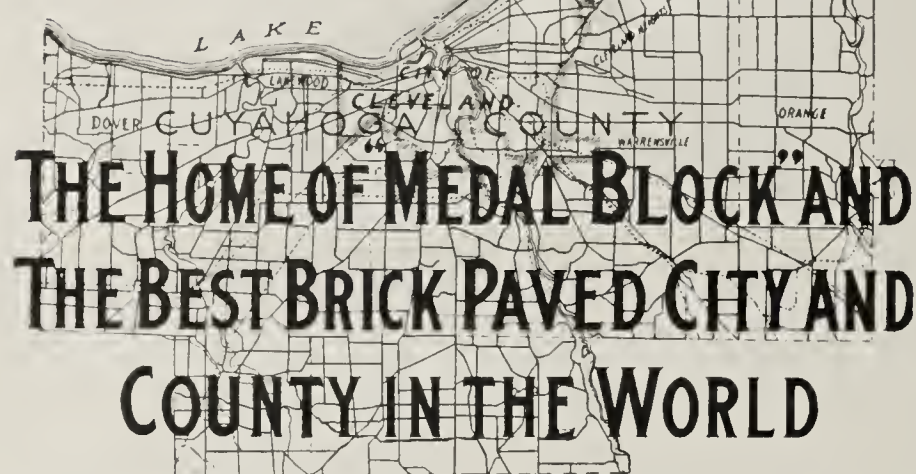
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The Danville Brick Company

Manufacturers of

The Unsurpassed Danville Paving Block

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LET US QUOTE YOU PRICES

SHAWMUT VITRIFIED PAVING BRICK WORKS

SHAWMUT, PA.

Alfred Yates, Gen. Mgr.

Vitrified Shale and Fire Clay
Paving Bricks and Blocks

Burned in Yates' Patent Kiln

SAMPLES AND PRICES ON APPLICATION

"Best Paving Block Made"



Daily Capacity 500,000

The Metropolitan Paving Brick Co.
Canton, Ohio

Ulster County was the leading producer in 1912 as for several years with Rockland second and Dutchess third. All of these counties showed an increase in value of brick marketed and all showed increased quantities except Dutchess, which showed a small decrease in the quantity. The only county to show a decrease in both output and value and average value per thousand was Rensselaer. This county reported the smallest quantity and value of brick in the region. The highest average value per thousand in 1912 was attained in Albany County—\$6.10. This county in 1911, together with Rensselaer, showed the highest average—\$5.51. The lowest average in 1912 was \$5.00 per thousand in Columbia County. In 1911 the lowest average, \$4.57, was in Orange County.

New Jersey's portion of the region contributed about 5 per cent of the quantity and value. This was a decrease of 10,067,000 brick and of \$32,184. The average price per thousand increased from \$5.62 in 1911 to \$6.10 in 1912. This was 38 cents per thousand higher than that for New York's portion and 36 cents higher than the average for the whole region and equal to the highest average in any county in the region in New York.

L. M. Dicker and H. T. Page of Alvord, Pa., have bought the plant of the Spencer Brick Co., Spencer, N. Y.

Sigmund Seisler and Morris Rudnor of Trenton, N. J., are establishing a brick plant at Burlington, N. J.

Warren Somers of the Somers Brick Co., Atlantic City, N. J., while excavating a clay mine at Bakersville, N. J., discovered a petrified forest, thirty feet below the surface. The forest covers nearly one hundred acres.

The American Brick Co., of Mica, Wash., has installed a new machine which gives the plant a capacity of 80,000 per day.

The Colville (Wash.) Brick Co.'s yard has been purchased by D. J. Burk, of Spokane, who will begin operations at once. This yard is within a short distance of the Colville city limits.

A recent purchase gave the Homestead Brick Co. of North Bergen, N. J., increased clay-land holdings to the extent of about 20 acres, with a frontage of 568 ft. on the N. Y. S. & W. R. R.

Two yards at De Pere, Wis., have started up for the season—Hockers Bros. and John Roffers.

Dean Gross, of Yankton, S. D. wants names and addresses of manufacturers of hollow tile, hollow building brick, face and common brick, with factories in Minnesota, Kansas, Iowa and South Dakota. He is interested, being a prospective builder.

Under the headline "Brick made in Trenton are Used All Over America" the Trenton, N. J. "Times" mentions shipments to New York City, Providence, R. I. and Meriden, Conn. You remember what they used to say about New Yorkers not knowing there was a civilization west of the Hudson River.

Mrs. Curry, wife of Stephen S. Curry of Danville, Ill., died a fortnight ago, after a brief illness. Mr. Curry is superintendent of the Western Brick Co., with which concern he has been connected for several years. He has a legion of friends who sympathize with him in his bereavement.

"Concrete is cheaper" was the reply given Chattanooga brick men who tried to interest the builders of the Hardwick & Hogshead apartments that burned clay was the only safe and sane building material. The headlines of the Chattanooga "Daily Times," May 16, read: "Collapse of Apartment. Nine Men Have Miraculous Escape From Death. Concrete Supports Give Way Without Warning. Part of Floor of Hardwick & Hogshead Building Falls. Bringing Four to Sidewalk—Accident Due to Inferior Mould Construction." Yes, concrete is cheaper—note the reason for collapse—inferior mould construction.

Fire Brick

Manufacturers of refractory materials and men interested in allied industries from many points east of the Mississippi river, attended the first gathering of the members and officers of the Refractories Manufacturers' Association, held since the organization meeting of April 22nd. The recent meeting was held in Pittsburgh, Pa., May 20th, and the standardization of all fire clay shapes was given consideration as well as the establishment of a closer relationship between the manufacturers and the consumers of fire clay products. "Testing and Methods of Improving Inferior Clays" was the theme of an address delivered before the association by A. V. Bleininger, director of the Ceramic Department of the U. S. Bureau of Standards, stationed at Pittsburgh. He was followed by Charles S. Reed, of Chicago, Ill.; John Penton, of the Iron Trade Review, Cleveland, Ohio; E. M. Allen, of Chicago; J. J. Brooks and J. H. McFeely, of Pittsburgh, and J. L. Green, of St. Louis, Mo. Because of the importance of the iron and steel industry to refractories, the new association has planned to hold a number of important sessions in Pittsburgh, which is the center of the steel interest. It is claimed that over 70 per cent of the manufacturers of refractory materials in the country are allied with the new association.

The Kenilworth Brick Co., at Kenilworth, W. Va., which is under the management of Fred Porter, of Wellsville, O., has received the order for over three million fire brick for use in wall construction for the thirty-kiln pottery being built in Newell, W. Va., by the Edwin M. Knowles China Co., of Chester, W. Va., and the Homer Laughlin China Co., of East Liverpool, O. These plants are being built in fifteen-kiln units.

Ohio fire brick scores again. The Massillon Stone & Firebrick Co., of Massillon, Ohio are shipping "Corundite" firebrick to the Pacific coast. An order for about ten carloads, for the sugar refining furnaces at Oxnard and Dyer, Cal., has just been completed and other orders are in sight from the same customers. The Massillon yard also ships "Corundite" brick to Germany, Denmark and other European countries.

F. W. Bryson, formerly superintendent for Mexico Brick & Fire Clay Co. of Mexico, Mo., has resigned to accept a position with the Hydraulic-Press Brick Co., at its Porter (Ind.) plant, where he is in charge.

C. R. Stedman, architect, of 836 Schofield Building, Cleveland, Ohio, writes us that he would like to correspond with independent manufacturers of fire clay products who would be prepared to furnish special molded shapes in fire clay, in large and small quantities, to Cleveland and other points. Interested readers will write direct.

The Joseph Soisson Fire Brick Co., of Connellsville, Pa., has just installed a new 150 h. p. boiler and automatic cutting table at its Volcano plant, and at the Davidson works, a new 125 h. p. boiler. These improvements were necessary to meet the demand for increased output and faster deliveries.

Capt. John Porter, well known as the oldest fire brick salesman and fire brick plant owner in the United States, has recovered his health, and has been discharged from the East Liverpool, (O.) Hospital. He is now at his home in Kenilworth, W. Va., and is slowly rounding into form. He will be hustling for new business within a very few days.

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The Purington Paving Brick Co.
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F. L. BARTLETT, Pres.

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Sterling Brick Company

Manufacturers of

Olean Vitrified Paving Blocks
Dunn Wire-Cut Lug Blocks
OLEAN, N. Y.

Marion Brick Works
MONTEZUMA, IND.

MARION PAVERS

A Strictly High Class Paving Block

Also:

Fancy Face
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Antiques, Etc.



Vitrified Shale Paving Blocks, Fire Clay
Paving Blocks, Dunn Wire-Cut-Lug
Blocks.

Paterson Clay Products Co.
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Ed. H. Callaway Engineering Co.

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NEW YORK CITY

Consulting Engineers

Brickologists

Clay Specialists

Designs for Complete Plants

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BRICK AND BLOCK

The Barr Clay Co.

C. C. BARR, Pres.

STREATOR, ILL.

Terre Haute Vitrified Brick Co.

MANUFACTURERS OF

High Grade Vitrified

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Samples Free

Address **TERRE HAUTE VITRIFIED BRICK CO.**

Arcade Building, Terre Haute, Ind.

Murphysboro Paving Brick Co.

Manufacturers of

THE CELEBRATED EGYPTIAN PAVING BLOCK

THE BLOCK THAT STANDS THE TEST

Prices and samples furnished upon application

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John L. Jackson, treasurer, Saginaw, Mich.

Executive Committee: G. Silvester, Calgary, Alta.; E. G. Chapman, Minneapolis, Minn.; E. M. Burchfield, Rochester, N. Y.; H. H. Tift, Tifton, Ga.; L. W. Penfield, Willoughby, O.

Oklahoma is to have another sand-lime plant, the Oklahoma Granite Brick Co., of Oklahoma City having started and now being run to the limit of its capacity.

Capitalized at \$75,000 with a complete set of officers and directors and a new business manager, the Silica Products Co., of Pacific, Wis., has taken over the brick and sand plant formerly owned by the Columbia Silica Co. and will push the business to the utmost. The old company still exists, but merely to close up its affairs, Assignee C. H. Fall having transferred all the property and good will to the new concern. The stockholders of the new company, at their first annual meeting, elected D. T. Lurvey, president; Dr. F. W. Hammond, vice-president; Thomas C. Hughes, secretary, treasurer and general manager.

It is said that the new tariff law will make the basic adhesive elements of sand-lime brick considerably cheaper and so help the industry by reducing the cost of production. Eastern manufacturers are hoping for a good share of New York's trade, when the new standard of requirements is adopted by the New York board of aldermen. The revised standards are now before the code revision committee.

The use of sand lime bricks on the Continent is still on the increase, and no signs of a decrease in their popularity are apparent. Not only are sand lime bricks used today by private builders, but municipal and state authorities are showing a great preference for this material for buildings of all kinds, says "Contract Record." In Berlin, for instance, sand lime bricks have been unconditionally passed for all purposes. Herr F. Komnick, Engineer, of Elbing, is the leading manufacturer for plant and machinery for sand lime products in Germany. When the industry was in its infancy, he turned his attention to it with a view to cheapening the production of the bricks without lowering the quality. He has accomplished this by diminishing the number of hands employed and decreasing the consumption of time and coal. The great majority of all existing sand lime factories in Germany and elsewhere, have either been built by him or fitted up with his special machines. A wide experience has enabled Herr Komnick to continue improving and perfecting with the result that his latest plants are unsurpassed. Over 800 workmen and officials are employed at Herr Komnick's new factory on the banks of the River Elbing, which started work in 1907.

IF YOU WANT HELP

The Classified Ad pages of "Brick and Clay Record" offer you every facility for getting the right sort of men at the right sort of price.

Machines and Equipment

Plant capacity is determined by the ability to "turn the kilns" regularly and this cannot be done on a plant where "wheelers" affect the situation. They constitute the most irresponsible form of labor on the yard and their scarcity and disinclination to work during hot spells and rainy weather caused serious disturbance with brickyard schedules last year, many yards being closed down for varying periods on this account. Hundreds of plants are facing one of the worst labor famines in the history of the trade and this fact accounts for the demand for mechanical means for loading brick from kilns to sheds or cars.

The Matthews Gravity Brick Conveyor has been tried, tested and proved, during the past ten years, to be economical to manufacturers of brick, tile and building blocks. By this method almost any kind of unskilled labor can handle clay products successfully and it is only a question of time when all modern factories will be independent of those autocrats of the yard—the wheelers. So great has become the demand for the gravity conveyor method that the Matthews Gravity Carrier Co., of Ellwood City, Pa., has been rushed, night and day, for the past three months, to keep up with its order file. The following manufacturers have placed orders for the installation of this method of handling since the first of the year:

January.—McAlonen Brothers, Akron, Ohio; Waldo Brothers, Boston, Mass.; Baldwin Brothers, Collinwood, Ohio; Crume Brick Company, Dayton, Ohio; Sibley-Menge Brick & Coal Co., Birmingham, Ala.; National Tube Company, McKeesport, Pa.; LaSalle Pressed Brick Company, LaSalle, Ill.; Roux Composite Brick Co., Plant City, Fla.

February.—Furlow Pressed Brick Co., Los Angeles, Cal.; Mulford Vitified Paving Brick Co., Los Angeles, Cal.; Worcester Sandlime Brick Co., No. Oxford Mills, Mass.; Victor Cushwa & Sons, Williamsport, Md.; Calumet & Heckla Smelting Works, Lake Linden, Mich.; Bowman Bros. Company, McKeesport, Pa.; Tennessee Coal, Iron & Railroad Co., Birmingham, Ala.; Clermont Sewer Pipe Co., Clermont, Pa.; Alabama Paving Company, Brooksville, Fla.; Glencoe Lime & Cement Company, St. Louis, Mo.

March.—Salisbury Brick Company, Salisbury, Md.; Atlas Press Brick Works, Ferris, Tex.; W. L. Hall, Madisonville, Ky.; Clark Pressed Brick Co., Malvern, Ark.; F. R. Williams Company, Newton Falls, Ohio; Wildes & Davidson, Akron, Ohio; Bessemer Limestone Company, Walford, Pa.; Goff-Kirby Coal Company, Euclid, Ohio; American Building Brick Co., Cleveland, Ohio; W. M. Pattison Supply Company, Cleveland, Ohio; Brooklyn Brick Company, Indianapolis, Ind.; American Steel & Wire Company, Worcester, Mass.; DeSoto Brick & Tile Company, DeSoto, Iowa; Hancock Shale Brick Company, Hancock, Md.; Diamond Pressed Brick Co., Ferris, Tex.; Carnegie Steel Company, Youngstown, Ohio; Ogechee Brick Company, Union City, Ga.; Yaddin River Brick Yard, Whitney, N. C.; Mormon Coolie Brick Works, La Crosse, Wis.; Iron City Brick & Stone Company, East Liberty, Pa.; Carnegie Steel Company, Pittsburgh, Pa.

April.—Lawrenceburg Pressed Brick Company, Lawrenceburg, Tenn.; Modern Construction Company, Fremont, Ohio; W. M. Pattison Supply Company (for resale), Cleveland, Ohio; Texas Pressed Brick Company, Ferris, Tex.; Kemmeter Bros. Brick Co., Jefferson, Wis.; W. M. Pattison Brick Company (for resale), Cleveland, Ohio; Buckshot Brick Company, Greeneville, Miss.; Advance Fire Clay Company, Uhrichsville, Ohio; Caughman Brothers, Columbia, S. C.; Eldorado Brick Company, Eldorado, Pa.; Kemmeter Brothers Brick Co. (second order), Jefferson, Wis.; Acme Shale Brick Co., Weyer, N. Y.; Gregg Hardware Company (for resale), Detroit, Mich.; Atlas Pressed Brick Company, Ferris, Tex.; Tennessee Coal, Iron & Railroad Co., Ensley, Ala.; Wichita Falls Brick & Tile Co., Wichita Falls, Tex.; Barbourville Brick & Tile Company, Barbourville, Ky.; Laurel Brick Works, Laurel, Miss.; Warner-Miller Company, New Haven, Conn.; Springfield Contractors' Supply Company, Springfield, Ohio; C. B. Whitmore Company, Lockport, N. Y.; J. B. McAuley, Galesburg, Ill.; Wm. Kelley Company, Grand Island, Neb.; Waters & Russell, Akron, Ohio; McShaffery & Son, Akron, Ohio; R. P. Burnett, Cleveland, Ohio; Bessemer Limestone Company, Youngstown, Ohio; Carbon Limestone Company, Lowellville, Ohio; Cuyahoga Brick & Shale Company, Cleveland, Ohio; Gould & Maybach, Collinwood, Ohio; Boehl Brothers, Cleveland, Ohio; Jno. B. Turner Company, St. Louis, Mo.; United Railways Company, St. Louis, Mo.

May, up to the 16th.—Westport Paving Brick Company, Baltimore, Md.; Merry Brothers, Augusta, Ga.; East Peoria Brick Company, Peoria, Ill.; Burke Brick Company, Fort Smith, Ark.; South Zanesville Sewer Pipe & Brick Co., So. Zanesville, Ohio; Silica Products Company, Portage, Wis.; Hocking Valley Brick Company, Logan, Ohio; Wassall Brick Company, Gloucester, Ohio; Barkwill Brick Company, Cleveland, Ohio; Omaha Clay Works, Omaha, Neb.; Presley Campbell, Canton, Ohio; Sequin Vitified Paving & Face Brick Co., Sequin, Tex.; Windsor Brick Co., Akron, Ohio.

R. O. Birchy will be in charge of the Bonnot Co.'s new offices in Atlanta, Ga. They are located at 1020 Candler Building.

Triumph Steam Brick Dryer

The only successful low pressure system known without vacuum pump. Adapted for clay containing large percentage of moisture.

The C. O. Bartlett & Snow Company

CLEVELAND, O., U. S. A.

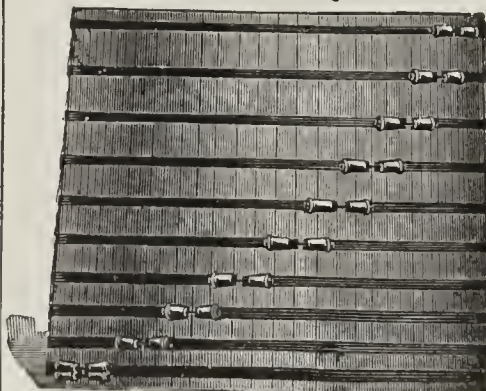


There's one "best" in every line, but that is not always best for everyone concerned. In the building trades

**Ricketson's Mineral
COLORS**

are acknowledged to be the best choice for *everybody*. Best for the architect because purest. Best for the contractor because they go farther. Best for the owner because they never change their color. For Mortar, Brick, Cement, Stone, Etc. Red, Brown, Buff, Purple and Black. RICKETSON MINERAL PAINT WORKS MILWAUKEE, WIS.

"The Tanks with a Reputation"



The construction of
**Caldwell
Cypress Tank**

is based upon scientific and conservative engineering principles that eliminate every point of weakness found in ordinary tanks.

The proven durability of the tank material, the scientific hooping and the expert construction, all combine to make the Caldwell Tank wear, last and give satisfaction. Get our illustrated catalogue before buying.

W. E. CALDWELL CO., (Incorporated), LOUISVILLE, KY.

Tanks { Steel-Wood } Towers
Wind Mills - Pumps - Gas Engines

Absolute Control of Temperatures in all Kinds of Kilns and Furnaces

Heraeus Le Chatelier
PYROMETER

Recommended by the highest authorities.

For measuring temperature between 0 and 1600 deg. Celsius, equal to 2920 deg. Fahrenheit. Successfully used in establishments for the manufacture of Brick, Pressed Brick, Terra Cotta, Pottery, Porcelain, Stoneware, Chamotte, Cement, Glass, Iron and Steel and other metals, particularly for Hardening and Annealing, also for Molten Metals, Cartridges and Ammunition, Chemicals, Gas Accumulators, and by Boiler Inspectors, Schools and Colleges.

Heraeus Patented Electrical Furnaces

For Laboratory and Experimental Use

Fused Silica Ware of Every Description at Moderate Prices

Heraeus Patented Fused Quartz Glass Articles

of every description. This Heraeus Patented Fused Quartz Glass is not affected by any changes of temperature whatsoever, and the coefficient of expansion is only 1-17 that of platinum. It is of the utmost importance for all purposes where the above qualities are essential. Write for information. Pamphlets and References on Application.

CHARLES ENGELHARD, Hudson Terminal Bldg.
30 Cortlandt St., NEW YORK CITY

Cars

All Styles



Rails

12 to 70 lbs.
in Stock



Sales Offices:

New York San Francisco Pittsburgh
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ORENSTEIN-ARTHUR KOPPEL CO.

THE POLICY

of

The Frink Pyrometer Co.

does not end at the mere **selling of Pyrometers**, but is most strongly supplemented by our practice of introducing **the Frink method of burning** during the installation of our Equipment. Our experience is yours for the asking. Write us.

The Frink Pyrometer Co.
Lancaster, Ohio

We Reline Press Boxes

We reline any make and for any shape brick. No job is too exacting for us — none too small or too large

We make Kiln Bands, Kiln Band Lugs, and Grey Iron Castings for Grinding Pans. Special Foundry Orders are a Specialty. Submit sketch or specifications.

Repairs for

Brick Machinery and Dryers

We solicit inquiries from discriminating buyers.
What are your requirements?

Bolivar Foundry and Machine Company
BOLIVAR, PA.

Fairbanks-Morse Induction Motors

Give Maximum Service

Our Type "B" Induction Motors have indestructible Rotors; anti-friction bearings; extra heavy insulation. These are the features that keep them

Always on the Job.

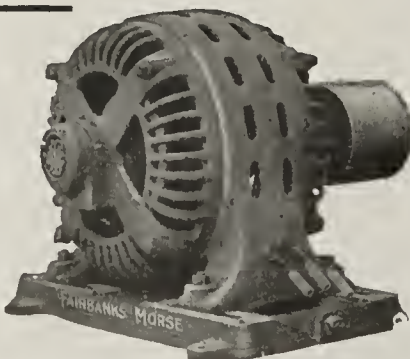
Read Catalog No. 1243A13 before you decide on a motor
Copy mailed promptly on request

Fairbanks, Morse & Co.

900 S. Wabash Ave.

Chicago, Ill.

Complete Electric Light and Power Plants, Oil and
Gasoline Engines, Gas Producers



A. Eugene Michel and Staff, Advertising Engineers, have moved their offices from 21 Park Row, New York, to 1001-7 Woolworth Building.

There is one case only on record where the yellow streak is an asset rather than a liability: The yellow strand in the Broderick & Bascom rope.—Pacific Builder and Engineer.

We will have to correct a statement made on page 876, in our issue of May 15, where we stated that a Gandy belt, which had been in operation at the Bessemer plant 7 years, had been repaired and was practically "as good as new." The fact of the matter is that the belt had been in use 27 years, instead of 7 years, which makes the performance much more than four times as noteworthy.

"A Cash Register for the Coal Pile" is the title of a six page publication issued by the Harrison Safety Boiler Works, Station C, Philadelphia, describing the Cochrane combined feed water heater and meter. The booklet, which contains a complete description of the apparatus, may be secured by addressing the company at the above address.

Gathering up the brick which are sent by parcel post to the Clay Products Show in Chicago, the American Clay Machinery Co. has sent them all to its plant at Bucyrus, where they will be used in the construction of a private post-office. By this time, these brick have cost more than twenty times their actual value to transport from place to place. This is equivalent to the freight from New York to Vancouver, B. C.

"What We Make" is the title of a compact 48-page book issued by the Green Fuel Economizer Co., of Matteawan, N. Y., describing fuel economizers, both standard and special, coverings for fuel economizers, mechanical draft outfits, heating, ventilating and drying outfits, hot blast heaters, steel plate fans, motor and engine driven fans, cast iron volume blowers, slow speed and standard speed planing mill exhausters, fan and cone wheels, wool wheels, ventilator wheels, propeller fans, vertical and horizontal engines and mechanical draft dampers.

Frank T. Townsend, Assoc. M. Am. Soc. C. E., formerly first assistant engineer of the New York State Highway Department, has accepted the position of assistant engineer in the inspection department of the Dunn Wire-Cut Lug Brick Company, of Conneaut, O. Mr. Townsend is a graduate of Rensselaer Polytechnic Institute and has been with the New York State Highway Department for the past five years, principally on brick construction. The business of the Dunn Wire-Cut Lug Brick Company has increased to such an extent as to make it necessary to enlarge this department.

The Shawmut Vitriified Paving Brick Co., of Shawmut, Pa., is electrifying their plant and has awarded the contract to Lee Goldstein, electrical engineer and contractor, of DuBois, Pa.

The Denison Tile Engineering Co. have moved their offices from the Schofield Building to the eighth floor, Hippodrome Building, Cleveland, O. This change of address also affects the Ohio Clay Co. and the Denison Ceramic Engineering Co.

GET INFORMATION HERE.

About the problems in manufacture and selling that bother you, but the place to sell or buy second hand machinery is in the classified ad pages.

Encaustic Tile



Stark & Faussett's Store in Trenton, N. J. They Are Tile, Grate and Mantel Dealers. The Entire Front is Veneered With 3/4-in. sq. Ceramic Mosaic Tile.

Manufacturers of floor tile are frequently asked the best method of laying and according to Charles Hilf, in the "American Architect," the main difficulty is encountered in doing the work so it does not sound loose or hollow when walked upon. He says there are a few rules that must be observed for best results, and that the tile should be laid upon mortar made with three parts of very coarse sand and one part of cement. The mixture should not be too wet, although sufficient dampness should be provided to allow the cement in solution to work up to the top when the tile are tapped into place. The mortar bed should be very evenly spread so that the four corners of the tile rest firmly, and the tile should be tapped in the center, so as to obtain an even bed underneath.

As an echo of the article on cement tile published by "Brick & Clay Record" May 15, comes the notice of the incorporation of the Indiana Mosaic Flooring Co., of Indianapolis, Ind., incorporated for \$150,000—to make Moorish tile "under the trade name of 'Adamantile'". William F. Tebbetts of Mobile, Ala., is secretary-treasurer.

The "Martin"

BRICK MACHINERY








Soft-Mud or Stiff-Mud Processes

Get Our Plans

Dry or Wet Grinding Pans

Barrows and Trucks

Disintegrators

Clay Cars--Dryer Cars

Holisting Drums

Modern

YARD SUPPLIES






The Henry Martin Brick Machine Mfg. Co.

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PRICE
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LANCASTER
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GET OUR BIG CATALOG

PHILLIPS & McLAREN CO. PITTSBURG, PA.

Builders of Pittsburg Standard Dry and Wet Grinding Pans, Rock and Ore Crushers
For BRICK, CEMENT, TERRA COTTA and All Kinds of REFRACTORY MATERIALS

When writing for Prices, state kind of Material and Capacity
Eastern Sales Office: Stephen Girard Building, PHILADELPHIA, PA.



On Hardest Drive



In This Big Plant

The etching on the left shows a **GANDY Belt** being used for *crusher drive* at the plant of the American Zinc, Lead & Smelting Company, Cartersville, Mo.

This company writes us: "We have been extensive users of **GANDY Belts** for a number of years, and have found them most satisfactory."

The GANDY Belt

is the pioneer stitched, cotton-duck belt made water, steam and heat-proof. 36 years have proven its success

In The Brick Field

It is not affected by atmospheric changes. Costs $\frac{2}{3}$ less than leather and much less than rubber belting.

Write for a sample of the **GANDY BELT** today—a postcard will do.

THE GANDY BELTING CO.
732 Pratt Street, BALTIMORE, MD.

New York Office: 88-90 Reade Street

Hollow Block

Several fireproof buildings, the cost of which will run into seven figures, will be erected by the United States government in the Canal Zone. Among them are two administration buildings, to cost \$300,000 each, two lock-control houses, four transformer houses, thirty-seven "type D" two-family houses, fifty "type C" one-family houses, twelve "type B" one-family houses and twelve type "A" one-family houses. Several other buildings, including residences, barracks and arsenals are being planned. By virtue of a contract recently closed, Mr. A. A. Pauley, of Youngstown, Ohio, started for Colon on May 20, to superintend the erection of a \$75,000 plant, equipped with machinery of his own invention, to make hollow building tile for use on the work outlined above. Twelve tile making machines will be installed and these are now being made by the Youngstown Engineering Co. of Youngstown, Ohio. Five million hollow tile are required for proposed construction on the isthmus and Mr. Pauley figures that with his machinery, he can make hollow tile 16 cents a piece cheaper than the government could secure other kinds of building units.

Hollow tile will have its inning at the United States Bureau of Standards when the Pittsburgh (Pa.) testing laboratory conducts a series of tests on this material, which will be, by the way, much more elaborate than those recently conducted on the 4 ft. x 4 ft. x 4 ft. brick pier, results of which were given in a recent issue of "Brick and Clay Record."

The Pennsylvania Fireproofing Company has booked one of the biggest orders in its history, and the plant at Ridgeway, Pa., will be operated to capacity for months to come. The new business calls for the delivery of six hundred carloads of building material for the Penn Tile and Construction Co., and will be used for the inside construction of a new fish wharf which is being erected at Boston, Mass.

Plans are being made by industrial interests at Oak Hill and Hamden, Ohio for the erection of a large tile mill at Black Fork, Ohio which will furnish employment for 100 men.

We understand that a book of plans will be prepared shortly which will give a line of moderate cost buildings, to compete with low-priced brick dwellings—that is, to cost from \$2,000 to \$3,500. When it is ready we hope to put it on sale, believing it will benefit our friends in the tile business

"If I had my way about it I would not permit a piece of wood, even the size of a lead pencil, to be used in the construction or finish of any building in the United States exceeding a ground area of 25 x 50 feet or three stories in height. Wooden floors, wooden window frames, doors and casing burn and help other things to burn. Everything that is made of wood burns and helps the fire to spread. Eliminate wood, remove the cause, and you have precluded the possibility of fire."—Former Fire Chief Croker of New York.

To Prevent Scum Appearing on Your
Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

Literature on Application

Other High Grade Chemicals For
Clay Industries

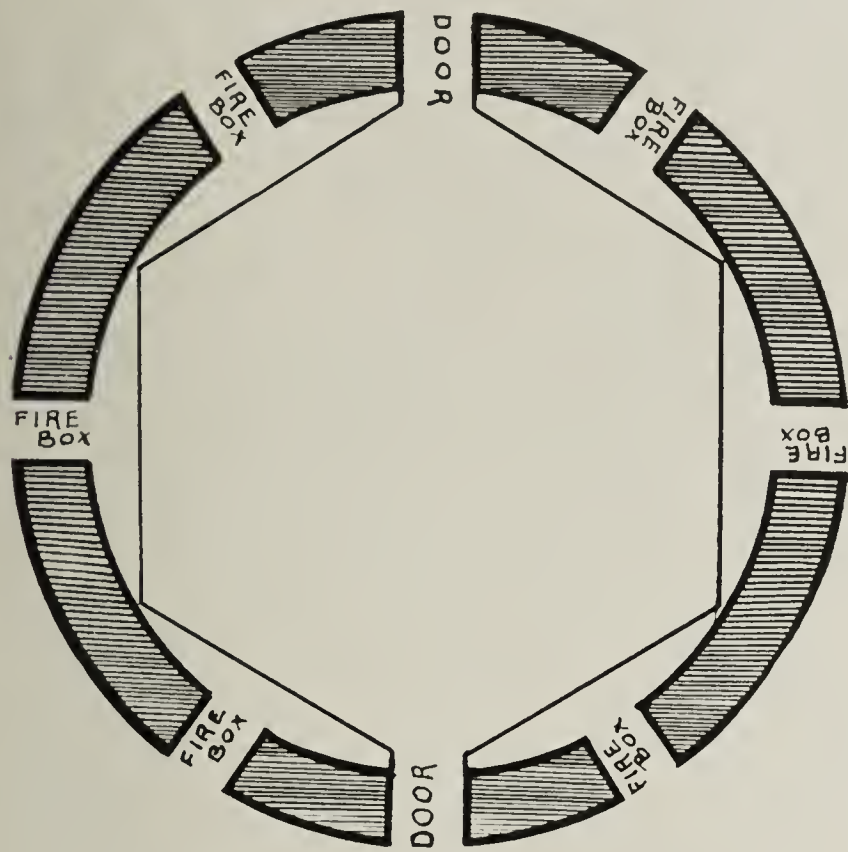
**The Roessler & Hasslacher
Chemical Company**

100 Williams Street, New York

WANT A SITUATION?

There is the right place for the right sort of a man somewhere. The problem is to get the two together. Our Classified Ad pages bring both in touch with the other.

Kiln and Burner



A Novel Arrangement of Fire-boxes.

We are glad to be able to print the interesting information given us by L. W. Maxwell, of Colesburg, Iowa, a reader who has had considerable experience in the manufacture of stoneware and flower-pots. Mr. Maxwell says:

I know how annoying it is to have bags and flame walls give way, and in a kiln built here, have done away with that difficulty by making the flame wall hexagonal or octagonal in shape according to the number of fire-boxes. This arrangement gives a greater capacity and the ware braces better, being much less liable to twist. The brace of the flame wall against the main wall is of great importance.

In relation to this letter, we desire to add that the signs of the times are particularly good when clayworkers are willing to give the results of their own experiences for the benefit of the craft. There was a time, not long past, when valuable discoveries of this character were shrouded in mystery, the idea being, evidently, to let the other fellow find out things for himself. The new way points to better feeling and better results.

"The Coking of Coal at Low Temperatures. With a Preliminary Study of the By-Products," by S. W. Parr and H. L. Olin has just been issued as Bulletin No. 60 of the Engineering Experiment Station of the University of Illinois. This bulletin reports the results of experiments on various types of Illinois coal with reference to the principles which govern their use in the production of coke. The temperatures used did not exceed approximately 750 degrees F.

Leaks Occur in Handling Coal.

Where do you dump your coal? Does it lay on soft ground that turns into mud at each rain or have you built a brick coal dock to receive it? Weighing coal to the kilns will show you that you do not have the use of all the coal billed you, as you doubtless accept mine weight and lose through losses in transit. Much of the difference will disappear when you stop letting the coal sink into the mud. A brick pavement both sides of the coal track will save its own cost in a year.

Write Us for list and discount on

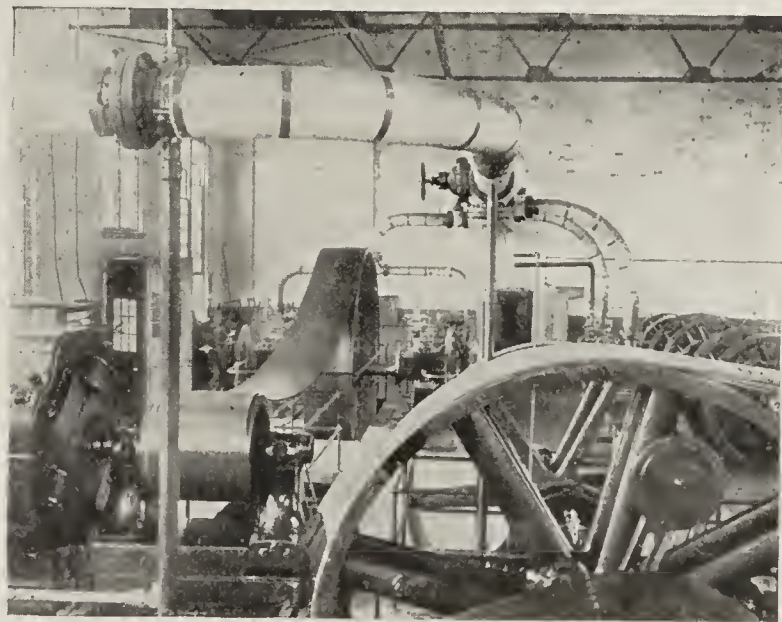
Sawyers' Red Canvas Stitched Belt

The best belting made for Conveyors and Driving. We sell Rubber Belting, Packing, Hose and everything else in the rubber line.

We are the sole distributors of "Sawyers" in Chicago. What do you wish prices on?

Chicago Rubber Co.

218 W. Madison St., Chicago



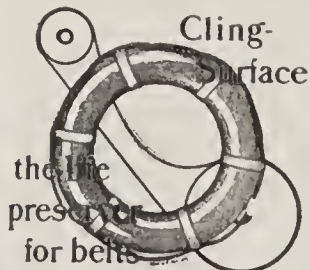
One Belt Peeled—One Belt Slipped Cling-Surface Stopped the Trouble in Both

This engine room contains two belts, the Manager Mr. R. E. Manley, writes:

"The first belt never gave trouble from slip, but the surface was peeling. Cling-Surface has helped greatly. The second belt slipped, was kept tight and despite several dressings still slipped. Cling-Surface stopped slipping entirely."

The fact that different troubles disappeared on each belt proves conclusively that Cling-Surface is a **NATURAL BELT FOOD**, not a mere surface treatment to stop slip temporarily.

Let us send further proof. Cling-Surface treatment is so inexpensive and so simple and can do so much that you cannot afford to do without it. Send for literature at least.



Cling-Surface Company
1029 Niagara St Buffalo N Y
New York Boston Chicago
Denver Atlanta Memphis etc



The Rust Clay Feeder

Actually saves \$500 in labor every year it is used in a clay plant. It cuts time. It increases capacity. It improves quality. We make these statements unqualified. Shall we send you proof?

The Marion Line

It is composed of eight leaders—the Rust Clay Feeder, the Tender Clay Dryer, the "Eli" Auger Machines, the Combined Disintegrator and Conveyor, the Michigan Disintegrator, the Winding Drum, Cast Iron and Semi-Steel Cars and the Famous Marion Cutters.

Marion Machine, Foundry & Supply Co.
Box 395, Marion, Ind.



Monthly Tablet

Ancient Order of Chaldeans

Issued Under Authority of
The Supreme Temple
Chicago

Officers of the Supreme Temple

Supreme Venerable Nebo	W. D. GATES
Supreme Learned Fo	WM. SCHLAKE
Supreme Exalted Philosopher	F. W. LUCKE
Supreme Keeper of Tablets	IVERSON C. WELLS
Supreme Keeper of Shekels	L. D. BINYON
Supreme Chief of Guards	W. J. GILBERT

Supreme Council of High Priests—Charles B. VerNooy, Supreme High Priest, Ka., Louis D. Binyon, H. G. Bowstead, E. K. Cormack, R. M. Combs, James A. Hogan, Herman L. Matz, C. L. Rorick, H. H. Rosenberg, William C. Varney, Iverson C. Wells and F. G. White.

(NOTE: Address all communications to Iverson C. Wells, Supreme Keeper of Tablets, 445 Plymouth Court, Chicago)

The New Emblematic Button.

There is some delay in the manufacture of the new emblematic buttons of the Order. Special dies had to be made and these have required a longer time than was expected. The jewelers have assured us, however, that a delivery will be ready shortly and in view of this fact advance orders will be received from those who wish the buttons.

The emblem is said to be one of the prettiest and most distinctive indorsed by any of the lodges. Of course the sacred man-headed winged bull occupies a prominent place on the button as do the Three F's. The button is to be made in two grades—solid gold and rolled plate.

Revising the Ritual.

The ritual committee of the Supreme High Priests is working on the revision of the work as exemplified at the installation of Chicago Temple No. 1, last March with the view of having it permanently recorded. The ritual is not to be materially changed but the brief time allotted for its preparation originally by its author, Supreme Keeper of Tablets Wells, allowed several inconsistencies to creep in. The ritual also is to be shortened somewhat and improved by the addition of some scenes. Following this revision active work will begin towards organizing local temples in several cities.

SECOND REASON WHY

"NESTOR"

IS UNEXCELLED FOR BRICK PLANT WORK

ALWAYS PLIABLE, FLEXIBLE,
NEVER BECOMES HARD
LIKE A BOARD

DO YOUR BELTS CONTAIN
THIS FEATURE?

The American Fabric Belting Co.

Cleveland, Ohio

Sewer Pipe

A correspondent writes that he is having trouble making pipes in a brick machine, owing to the machine getting hot. He asks whether this is due to the machine being unsuitable and whether a special pipe-machine is necessary. Up to this time he has made only 2 in. to 6 in. diameter pipes but wants to make larger sizes if it be possible. There is little doubt that the main cause of the machine's running hot is a wrongly designed mouthpiece or that the machine is driven too rapidly considering the small amount of clay which can escape through the mouthpiece compared with that when the machine is used for bricks; or it may be that the clay has not been properly prepared. For small pipes such as those it is chiefly desired to make, a horizontal brick machine should prove quite suitable, though there are many advantages in using a pipe machine such as is advertised in our pages from time to time. If the pipes are correctly made so far as appearance goes, a little observation and trial will soon show which of the troubles mentioned above is causing the machine to work hot. At the same time, it should be noted that the clay column always comes warm out of the machine owing to the unavoidable friction on the clay during its compression at the end of the machine and in the mouthpiece. Nevertheless, the pipes should not be hotter than the bricks if the machine is run right. The most probable reason (particularly if the clay tries to work backwards in the machine), is that it is driven too rapidly or is filled too full; for the former a smaller pulley on the countershaft will be needed, for the latter it will be sufficient to watch the man feeding the machine.

The directors and officers of the newly incorporated Marshalltown (Ia.) Sewer Pipe & Tile Co. are: A. B. Wilder, of Lyle, Minnesota; J. S. Culbert, of Portland, Indiana; F. J. Gary, of Marshalltown, Iowa; P. J. Fish, of Akron, Ohio; W. C. Horn, of Muncie, Indiana; J. E. Norris, of Denver, Colorado; and Warren Overpack, of Webster City, Iowa. The officers are: president, Warren Overpack; vice-president, W. C. Horn; secretary, J. S. Culbert; treasurer, F. J. Gary. While the company was only recently incorporated, it has been doing business for some time past under the above title.

The annual output of the plant of the Great Eastern Clay Co. at South River, N. J., has been increased 100,000 tons. They manufacture immense quantities of conduit, sewer pipe, building block, flue lining and glazed ware.

Edward J. Stokes, of the Harrison building, Philadelphia, is reported as booking some good orders for sewer pipe.

There should not be too much silica in clay used for the manufacture of sewer pipe as the silica is liable to run and a split pipe will result.

The American Sewer Pipe Co. is said to handle about 1,000 cars of pipe each year through its Philadelphia office alone.

A recent report of Cincinnati's engineering department shows the total length of sewers in that city on Dec. 31, 1911, was 350.33 miles, of which 273.61 miles were pipe sewers and the remainder, 76.72 miles, were of brick and stone. From Jan. 1 to Oct. 1, 1912, a total of 7.3 miles of sewer were completed, bringing the total up to 357.63 miles. During 1911, 4.62 miles of brick sewer and 6.74 miles of pipe sewer were built.

WATCH THE BUCYRUS DIG!



18B Bucyrus Shovel, 7-8 Yd Dipper, Bloomfield Clay Co., Perth Amboy, N. J.

BUCYRUS REVOLVING SHOVELS

are especially adapted for brick-yard requirements. They may be mounted on car wheels or traction wheels. For plants of 125,000 bricks capacity or less. They can be operated by one man. Think the of saving in labor costs and troubles! They may be operated by steam or electricity.



BUCYRUS COMPANY

South Milwaukee, Wis.

New York
R-30-1

Chicago

Duluth

Birmingham



OUR COUNTERS

Give an Alarm
with every
Count
Never Forget
Never Lie



COUNTERS

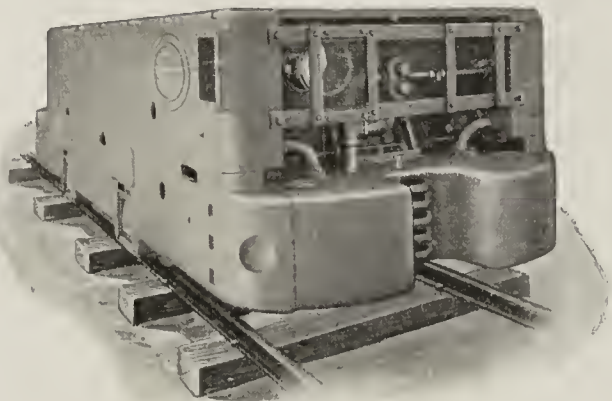
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EVERY PURPOSE

Order One Today and STOP GUESSING

THE CERAMIC SUPPLY AND CONSTRUCTION CO.
Columbus, Ohio

Gasoline Motors



Over 300 in Use—
Used by 150 Companies.
Used for Underground
or
Surface Haulage—
2½ to 16 Tons Weight.

Geo. D. Whitcomb Co.
Rochelle, Illinois

Drain Tile

Iowa seems to be the Mecca of drain tile men, new plants starting and old plants enlarging almost daily. One of the old timers, the Washington (Iowa) Brick & Tile Co., was formed twenty-five years ago by F. E. Swift, who controlled the plant and did a flourishing business until eight years ago, when it passed through a number of hands, finally to Charles W. Long, who is now the sole owner of the enterprise. The plant has a capacity of 20,000 brick and 15,000 four-inch tile a day, and makes common building brick, hollow block and drain tile, the latter being its principal product. The clay deposits are ample to run the factory fifty years at its present capacity.

A new tile plant, located at Nevada, Mo., will be in operation the early part of this month. It is owned by W. F. Norman and members of his family, the corporate name being the Norman Clay Tile Co.

Four kilns are under fire on the plant at Hutchinson, Minn., where the plant of the Hutchinson Brick & Tile Works is located. Walter Madsen, the drainage engineer of the concern, has received letters from private citizens and county authorities in Litchfield, Lester Prairie, Mayer, Watertown, St. Bonifacius and Monticello, asking him to lay out farm drainage systems there and in the vicinity of Hutchinson. The institution of a drainage engineering department is an enterprising move on the part of this tile making concern and will be sure to give them a splendid return in the near future.

S. W. Stuart, formerly manager of the Schakelford Brick & Tile Co., of Des Moines, Iowa, has resigned, to accept a stock interest and managership in the Belle Plaine (Iowa) Brick & Tile Co.

The progressive W. M. Fox Tile Co., at Obion, Tenn., believes in letting no opportunity go to waste for impressing on its farmer friends the importance of tiling their lands, so the stationery of the firm carries the following message to prospective customers in a merry jingle that tells a big story in a few words.

Drain Your Farm or It Will Drain You.

I am only a hole in a humble vocation,
Yet I greatly control your civilization;
I am very tenacious and hard as a stone,
And am like old Horatius in holding my own.

So lay me down, keeping me straight in the ditch,
And while you are sleeping, I'll be making you rich.

Every farmer of pride dearly loves to provide
For the future—the son and the daughter;
So give me a chance, and I'll greatly enhance
Every acre I drain of its water!

And here's my great beauty—I'm always on duty,
Out of reach of the "bills and the bears;"
And when you're in your grave I'll continue to slave
For your children—their children and theirs!

My habits are good—I require no food!—
(My joints are all made without mortar)
And I always abstain when deep in the drain,
From anything stronger than water.

If your land is too wet and you're burdened with debt,
And incumbrance begins to accrue,
Obey nature's laws—by removing the cause,
Drain your farm—or it will drain you.

'Tis so foolish to plant where the wild goose and brant
Might paddle from March to September;
You might as well sow on a November snow,
And expect seed to grow—in December.

Some farmers are failing, and weeping and wailing,
And blame the good Lord without reason!
When if they would stop sowing seed in the slop,
They might raise a good crop every season.

Most farmers lament the money they've spent
For things only made to beguile;
But never as yet did a farmer regret
Paying Fox Tile Co. for tile.

CLAY HAULAGE

Reduce costs of transportation by using a

Davenport Industrial Locomotive



Small Size—Reasonable Cost—Especially built for use of clay-products manufacturers', for hauling clay or shale from pits or mines to plant.

Cheaper Than Horse Transportation
and will reduce costs of delivering your material to your plant, thus increasing profits.

All About Modern Industrial Railways

Write us for particulars

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Chicago: 12 and 14 So. Canal St. St. Paul, 1308 Pioneer-Press Bldg.
Seattle: 617 Western Ave. New York City, R. 2052 Grand Cen. Term. Bldg.
Canadian Representative: F. H. Hopkins & Co., Montreal, Que.

Freight Tariffs

It is a well-known fact that the selling price of clay products has not increased in proportion to the advances in labor, fuel and insurance. Employers' liability laws are being enacted that will add to the heavy burden already carried by clayworking plants, coal and oil are at top-notch prices, and "welfare" laws are sure to bring larger payrolls with no compensation in the way of increased output or higher grade production. Competition prevents higher selling prices in territories already crowded with clayworking plants. The weight of burned clay, compared to its market value as a finished product, makes its cost of transportation out of all proportion to the costs that enter into its manufacture. While doing his utmost to economize at every possible point, from clay mine or shale bank to the loaded freight car, cutting costs by installing labor-saving machinery and increasing production to decrease overhead, the clayworker halts at the car door and, resting securely in the belief that the all-wise and beneficent Interstate Commerce Commission is taking care of his interests, *pays what he is asked to pay, to bring his goods to market.* He uses his greatest persuasive powers to secure better prices on everything he buys for the plant, makes contracts for coal that are, at times, wonderfully low, "hangs out" for discounts on machinery supplies and, seemingly, "buys right" all along the line. *But he pays the railroad whatever it asks to take his goods to the place where they are to be used.*

His complacency is due to his taking the position that "the other fellow pays the freight." The fallacy of this is proven when the shipper acknowledges his inability to compete beyond a certain radius, *on account of the high freight rate*, and his frantic endeavor to build up a local trade, frequently in a section that, being a clay country, is crowded with clay plants, all seeking a share of a trade that is, at best small and, from a price standpoint, unsatisfactory. The man who makes the brick, or tile, or sewer pipe or flower pot, as the case may be, *pays the freight every time*, since his customer buys f. o. b. destination mentally, if not actually. The few shippers who have been wise enough to acknowledge the truth of this position, have quoted f. o. b. destination for some time, treating as idle the objections that it put false valuations on the books and made unnecessary cross entries. They overcame the other objection—responsibility for condition of goods on arrival, by quoting "f. o. b. the factory, freight allowed to destination"—a poor makeshift, since, while it relieved them of legal responsibility, did not do away with their moral obligation to deliver the goods to the customer in good condition.

But they gained one advantage over the shipper who thought the "other fellow" paid the freight—they know what their goods bring them *delivered in every market they are serving*—and they have learned just how great a "tax" this freight "tariff" really is. Learning this, they are studying the problem of freight rates themselves or employing men who are qualified to advise them on this, the most vital point of production cost. The following changes in rates affecting various clay products, have become effective since our last issue.

From Eastern Points.

From Baltimore, Md. (port) import clay to Covington, Va., 10c.

From Callahan, Fla., brick (common) to Kingsland, Ga., \$1.35; to Woodbine, Ga., \$1.50 per M. brick.

From Drummond and Shawmut, Pa., "clay products"

The Greatest Economy

is effected through the use of up-to-date methods and equipment



The Martinsburg Brick Wagon

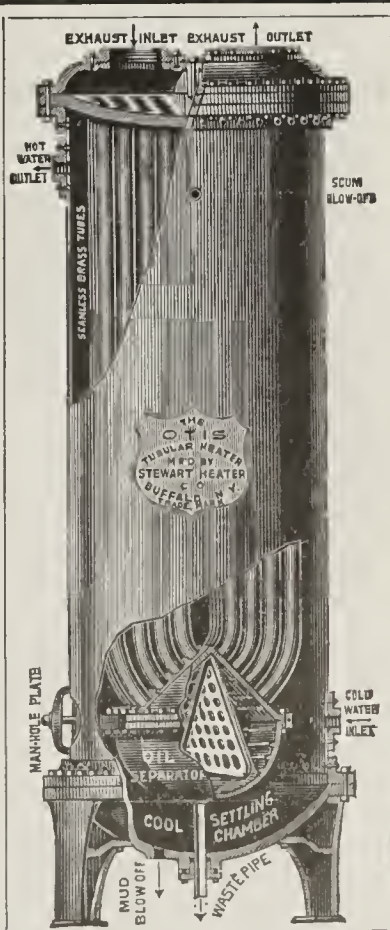
is the last word in up-to-date delivery equipment. Not an experiment but proven by the most thorough tests under hardest conditions.

Slides out the load in one minute and doesn't chip a brick. No complicated mechanism. Capacity 1400 to 2000.

AUBURN WAGON CO.

450 Race Street,

MARTINSBURG, W. VA.



THE OTIS

Tubular Feed Water Heater, Oil Separator and Purifier

is not an experiment but a tried and trusted appliance that the makers are not afraid to

GUARANTEE

To heat the feed water to the *boiling point* (210 to 212 degrees) with the exhaust steam without causing any back pressure, also to *extract the oil from the exhaust*, so that the exhaust steam after being passed through the heater can be used for other heating purposes, and the water of condensation for the heating system be returned to the boiler without the *additional expense of an eliminator*.

We are so sure of the OTIS that we agree to pay all cost of a trial—freight, cartage, piping, etc.—if it fails to do all we claim for it.

Catalogue and Prices at Your Service

The Stewart Heater Company,

33 EAST DELEVAN AVENUE

• BUFFALO, N. Y.



Chase Improved Flexible Bearing Folding Deck Dryer Car

See this car before placing your order.

We also manufacture a full line of Side Dump, Bottom Dump and General Purpose Cars, Transfer Cars, Turntables, Switches, etc.

The Chase Foundry & Mfg. Co., Columbus, O.



The Superior Quality of

"INDUSTRIAL CARS"

is the

result of many years of practical experience and there has been no branch of clay manufacture in which they have not been placed in service.

The investment demanded for the best possible car for your plant requires careful investigation.

The Industrial Car will be your first choice and the one eventually purchased. The manufacture of dryer cars is only a small part of our line. We have a car for every need.

Write for our catalog and let us submit an estimate for the coming season's requirements.

Electric Locomotive & Car Co.

Successors to The Industrial Car Co. and The Cleveland Car Co.

West Park, Ohio

to Jamestown and Red House, N. Y., \$1.25 per net ton.

From Kaulmont and St. Mary's, Pa., "clay products" to Cleveland, Ohio, \$1.75; to Defiance, Wooster and Newark, Ohio, \$1.70; to Columbus and Franklin, Pa., \$1.50; to Jamestown, N. Y., \$1.25; to Buffalo, N. Y., 95c; to Rochester, N. Y., \$1.15; to Pittsburgh, Pa., \$1.25 per net ton.

From Orchard Park and Jewettville, N. Y., brick (building, hollow and paving), hollow building blocks and building tile, to Niagara on the Lake, Ont., \$1.10 per net ton.

From Middle West Points.

From Athens, Glouster and Trimble, Ohio, brick and articles taking same rate, to Huntington, W. Va., \$1.15 per net ton.

From Bloomfield, Ind., brick, to Oolitic, Ind., 70c per net ton.

From Boone and Des Moines, Iowa, brick, to Ash Creek, Rock Rapids and Doon, Iowa, 8c; drain tile, 9c.

From Chaska, Minn., brick (common, hollow and pressed), to Redwood Falls, Minn., 8c.

From Chicago, Ill., common brick to Bridgeton, Mo., \$1.90 per net ton.

From Chicago, Kensington, Grand Crossing, Burnside, Riverdale, New Chicago, Windsor Park, Cheltenham, South Chicago, West Pullman, Blue Island, Manteno and Chicago Heights, Ill., drain tile, to Hawthorne, Berwyn, Broadview, Hillside, Elmhurst, South Addison, Addison, Swift, Cloverdale, Schick's Crossing, Granger, Munger, Coleman, Youngsdale, Bowes, Plato Centre, Burlington, Charter Grove, Genoa, Hart, Colvin Park, Irens, Perryville, East Rockford, Alsworth, Seward, Evarts and Freeport, Ill., 5c; to Scioto Mills, Red Oak, Buena Vista and Orangeville, Ill., and to Clarno, Monroe, Stearns, Elmers, Monticello, Belleville, Basco, Fitchburg, Summit and Madison, Wis., 6c; to McConnell and Winslow, Ill., and to Martintown and Dill, Wis., 7c.

From Dismond, Mo., brick (except bath and enameled), brick blocks, fire clay and drain tile, to Des Moines, Iowa, 7½c; to Sioux City, Iowa, 10c.

From Harviell, Mo., to Rodney's Mill and Birds' Point, Mo., brick (except bath and enameled), 4½c; drain tile, 7c; hollow building tile, 4½c.

From Kansas City, Mo., brick, to Chillicothe, Mo., 95c; to Maryville, Mo., \$1.05 per net ton.

From Kansas City, Mo., brick (building or paving), to Centralia, Mo., \$1.25; to Glasgow, Mo., \$1.05; to Mexico and Thompson, Mo., \$1.30 per net ton.

From Mason City, Iowa, brick, to Doon, Iowa, 8c; drain tile, 9c.

From Middleport, Ohio, brick and articles taking same rate, to Huntington, W. Va., 70c per net ton.

From St. Louis, Fulton, Mexico and Vandalia, Mo., Alton and East St. Louis, Ill., brick, drain tile and articles taking same rates, to Toledo, Iowa, 9c; to Hampton, Chapin, Sheffield, Hurley, Flint, Clear Lake Junc. and Mason City, Iowa, 10c.

From Toledo, Ohio, brick and articles taking same rates, to Detroit, Mich., 70c; to Monroe, Mich., 55c per net ton.

From Versailles, Mo., brick and articles taking same rate, to Gem and Colby, Kas., 17c.

From Western Points.

Between Aberdeen, S. D., and Chicago, Ill., Burlington, Iowa, and rate points, brick (except bath and enameled), clay conduits, creosoted paving blocks and other commodities, 20½c; between Moberly, Mo., St. Louis, Mo., Alton, Ill., East St. Louis, Ill., and rate points, 21½c.

From Arcadia, Cherryvale, Columbus, Fredonia and Fort Scott, Kas., Liberal and Pittsburgh, Mo., brick (except bath and enameled) and hollow building tile, to Alma, Mo., 9¼c; Odessa, Mo., 8¾c; Higginsville and Marshall, Mo., 7c.

From Caney, Carlyle, Chanute, Cherryvale, Coffeyville, Fredonia, Humboldt, Iola and Independence, Kas., Bartlesville and Collinsville, Okla., brick, to Enid, Okla., 8c.

From Caney, Carlyle, Chanute, Cherryvale, Coffeyville, Elk City, Fredonia, Humboldt, Independence and Iola, Kas., common brick, to Black Tower, New Mex., 16c; Melrose, New Mex., 18c; Da Lande, New Mex., 21c; Vaughn, Mountainair and Beene, New Mex., 25c.

From Lincoln, Neb., drain tile, to Garland and Powell, Mo., 39c.

With the Potter

In the death of John T. Cartwright, at East Liverpool, O., the domestic pottery trade lost one of its leading figures. Mr. Cartwright died after an illness lasting but a day or so, and not until a few hours before his death was his condition considered anyways critical. He was elected secretary-treasurer of the United States Potters' Association at its session in Pittsburgh, Pa., last fall, succeeding Charles C. Ashbaugh, of the West End Pottery Co. Mr. Cartwright was a bachelor, and took a prominent part in Masonic and social club and political circles. He started to work in the pottery his father built in East Liverpool, first learning the clay departments, then going into the warehouse. From there he went into the general offices, and at the time of his death was in charge of the sales department. He is survived by his brothers, Ambrose and Harry Cartwright, who will continue to operate the business of the Cartwright firm.

All resolutions which will be considered at the coming convention of the National Brotherhood of Operative Potters, to be held in Atlantic City in July, have been received at the headquarters in East Liverpool, and they are less than half as many as were presented on the convention floor last year. The Brotherhood this year will have to deal with the wage scale of the domestic ware, as last year the sanitary pottery scale was under discussion. The Brotherhood makes a scale to last for two years, so that each year an alternate branch of the trade is dealt with. Legislation pending in Washington is said to have been the cause of no demand being made for an increase in wages. The bulk of the resolutions sent in by the different locals has to do with the internal workings of the potters' organization and its various auxiliaries.

It has come to the notice of the American pottery manufacturers that the Japanese have had representatives in American pottery centers from time to time during the last few years, and that this has resulted in the placing of a large order for pottery making machinery in this country. The building of this pottery in Japan will give more competition to American potters and, under the decreased tariff, will doubtless hurt some of our own plants severely.

Most all of the 30 kilns being erected by the Homer Laughlin China Co., and the Edwin M. Knowles China Co., at Newell, W. Va., have been topped out, and the erection of the walls is progressing under most favorable circumstances. These new 15-kiln pottery units will likely be placed in operation early during the coming fall.

Operations in the manufacturing department of the Globe Pottery at East Liverpool, O., have been suspended for an indefinite period. President N. A. Frederick has not announced when the plant will resume work again in the clay departments.

The property of the Goodwin Pottery Co., at East Liverpool, O., has been offered for sale, and it is said that a deal will be consummated within a short time. This firm liquidated about a year ago, and since then the plant has been idle, and the bulk of the machinery has been disposed of. George Goodwin, one of the members of this firm, has said that several offers have been made for the site, which is desired for other than pottery purposes.

Edward J. Smith, president of the Standard Pottery Co., of East Liverpool, O., operating two plants here, has sold his interest in the company to Patrick McNicol and Con Cronin fellow partners. Between \$60,000 and \$70,000 is said to have been involved in the transaction. Since the organization of the company, Smith, McNicol and Cronin have been the principal stockholders. The entire management of the plant has been under the direction of the trio. Within the past few years they added the old Burford pottery, now known as Standard Pottery No. 2 on the Horn switch, to their possessions. This deal follows in the wake of Edward J. Smith's brother, William Smith, former local man, selling his stock in the Salem China Co., of Salem. Edward J. Smith, it is understood, will remain with the Standard company for the remainder of the year in the capacity of sales manager. The reorganization of the company will result. Patrick McNicol will become president and general manager, it is said.

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If not, your best interests demand an early affiliation with us. Write for our literature at once, and learn the amount of good we can do you.

WILL P. BLAIR, Secretary
**National Paving Brick
Manufacturers Association**

Locomotive Engineers' Bldg.
CLEVELAND, OHIO

Williams Wet Clay Grinder

This is the **ONLY** machine that will **GRIND** clay and shale direct from the bank at **ALL** times **WITHOUT CHOKING UP**.



ALL ADJUSTMENTS PATENTED

The Williams is manufactured and licensed under ninety-seven separate and distinct patents.

The Only Machine of Its Character Made

The hammers are adjustable and the position of grinding plates may be changed at will while the mill is in motion. This is done by a hand wheel on outside of machine.

The Williams is thoroughly steam-jacketed both front and back, including the hopper, top and bottom of machine.

**We Can Work Any Clay
That Will Make Brick**

Write for Complete Clay Catalog No. 18 with List of Users and Endorsements.

**Williams
Patent Crusher & Pulverizer Co.**

Factory: **St. Louis, Mo. 2701 No. Broadway**

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SHAVING PLANT COST BIG PROBLEM.

One Manufacturer Shows Way to Economy Through the Hauling of Raw Clay.

The clayworker probably has more problems to solve in the economical conduct of his business than any other manufacturer and each of these problems are of such vast importance that failure in any one particular case may mean disaster.

Beginning with the mining of the raw clay and following it through the various processes of manufacture until it reaches the finished state, there is every opportunity for failures and mistakes. An antiquated method here and a costly system in another place may mean the difference between a money-making and a money-losing plant.

Take for instance the haulage of the raw clay from the pit to the mill. Many clayworkers overlook this important feature, feeling it of small significance and devoting all their energy and time to shortening methods and processes in the plant proper or in the dryer and kiln.

The question of clay haulage, however, is an important matter and many times those who wonder why they cannot make a profit every season may trace their failures to the clay pit.

Dewey Bros., of Goldsboro, N. C., who manufacture a special light locomotive for the brickmaker, claim to have solved the problem from the pit to the mill. This locomotive is said to be very economical in its fuel consumption and because of its increased efficiency, greatly reduces the expense of haulage. The Dewey system, as well as all others that are intended to reduce cost is worthy of investigation.

Operating one of the largest and best equipped plants in Pennsylvania, the Mt. Union Refractories Co. has followed the modern demand for efficiency in shop practice by installing a complete equipment of Gerlock steel cars.



The illustration shows the Mt. Union plant with the cars in place, ready for loading. The high quality of the Gerlock, its care in manufacture and reputation for wearing quality have won the support and commendation of large manufacturers of clay products all over the country, being twin money savers with the Gerlock steel moulds, familiar wherever clayworking is.

The Letter Box

Walter Colyer, secretary, Albion Shale Brick Co., Albion, Ill.—“Within the past several months a number of items have appeared in your excellent publication relating to the scarcity of building brick in the city of Tampico, Mexico, and various propositions have been mentioned having for their purpose the building of a modern brick plant in that locality. Since, through frequent visits to Tampico and the region round about, I am quite well acquainted with the conditions in that city I desire to say that in my opinion there is no better location anywhere for an up-to-date brick plant. The nearest brick worth mentioning are made at Monterey, 322 miles distant, and they are sold at excessively high prices. Good yellow clays abound in the suburbs of Tampico, and as to shale, the greatest beds I have ever seen or heard of are located within easy reach of the city.

“Tampico, which has scarcely been disturbed by the revolutionary troubles, is a rapidly growing city, certainly destined to become one of the great seaports of the North American continent. Many large structures, ranging from one to even six stories in height, are now in course of construction, but on account of the impossibility of obtaining brick, concrete is quite generally used. However, some very fine structures are even now built of imported brick.

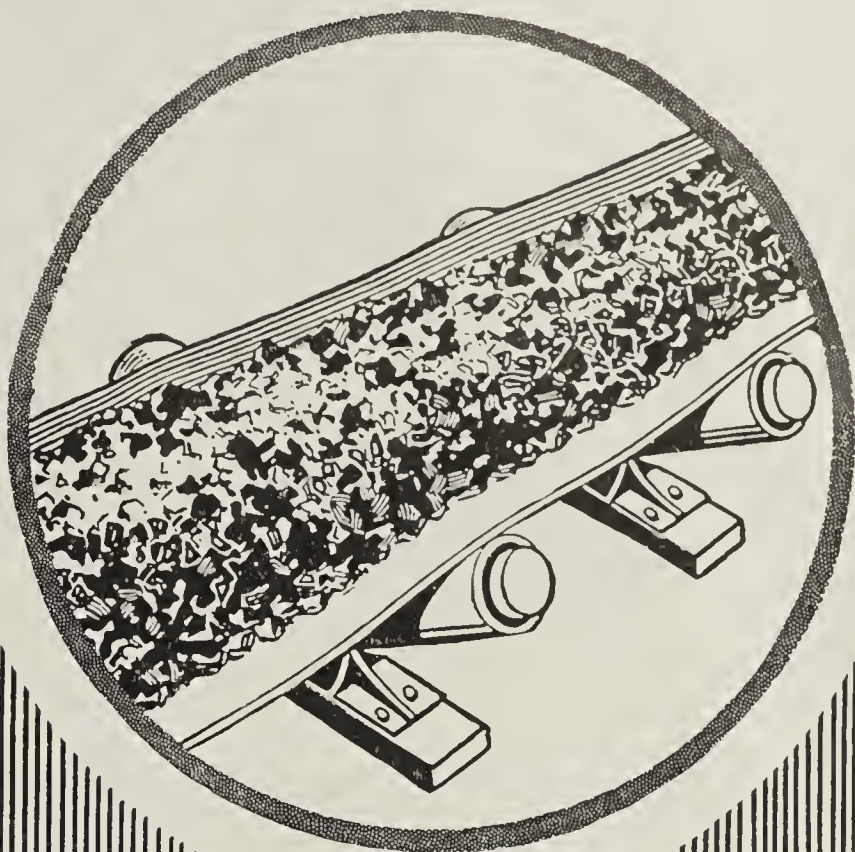
“During the Diaz rule, four years ago, when it was the practice to grant exclusive franchises for almost everything, I was offered the exclusive franchise for the manufacture of paving brick in several of the northern states of Mexico; and was furthermore assured of a guarantee of the sale of the brick, when made, for use in paving several of the cities of the country. It is scarcely likely that anything of the sort would be granted now. However, there is unquestionably a big demand for good building brick at healthy prices.”

P. M. Johnston Brick Yards, St. Elmo, Ill.—“Enclosed find money order for \$2.00 for which please mark our subscription ahead that many years. We find many good helpful things in the ‘Brick and Clay Record’ and do not want to be without it.”

Boonville Brick & Tile Co., H. T. Turkett, Mgr., Boonville, Miss.—“We like your paper and think it has benefited us a great deal more than the price of the paper. Will just state here that clay brick and clay-drawn tile are taking the lead in this part of the country. It is a mighty hard thing to fool the people long at a time.”

Columbus Brick Works, Columbus, Neb.—“Brick and Clay Record” is certainly a masterpiece of its kind, and I would not be without it for twice the cost. The brick business is good in Nebraska, and we are all trying to make it better. At present we are busy with six masons and fifteen laborers erecting a Hoffman continuous kiln of 16 chambers. Will use fan for draft.”

J. W. McMillan, Pres., Milledgeville (Ga.) Brick Works Co.—“It gives me pleasure to mail a money order for a continuance of your always instructive and interesting journal. Business continues good with us. We are enlarging our plant, one of the improvements being a semi-continuous ‘Haigh’ kiln 370 feet long, with a chimney 152 feet high.”



Avoid Shut Downs

Conveyor Belts that necessitate frequent shut-downs for repairs or replacements burn up money. Here is a belt that runs continuously all through its long service—always of unvarying quality and reliability throughout.

LONGLIFE CONVEYOR BELT

undergoes more hard service and handles more tons per dollar cost, than any other belt made

This is not a claim, but a statement of fact which we hope you'll ask us to prove.

Longlife Conveyor Belts are always flexible. They run straight, never run off the idlers or spill. Do their work day in and day out without attention or trouble of any kind.

Let us tell you the kind of service that Longlife Belts are giving to others whose conveying problems are similar to yours.

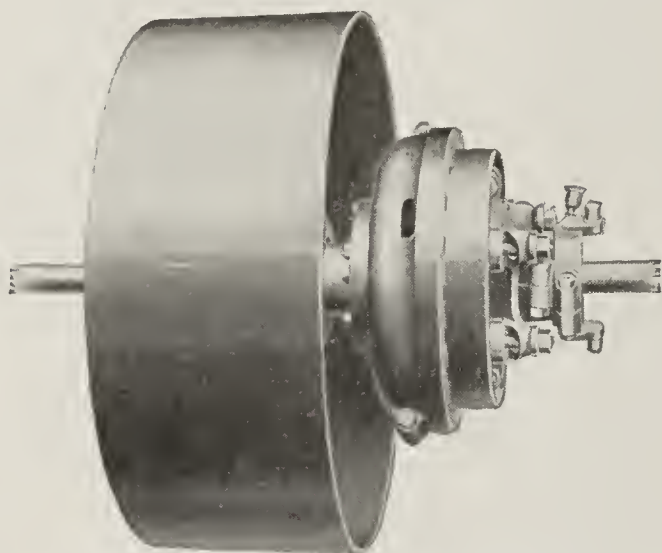
The B. F. Goodrich Company

*Makers of Goodrich Tires
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There is nothing in Goodrich Advertising that isn't in Goodrich Goods


DODGE


Dodge Split Friction Clutch in Combination
with Split Iron Pulley

Accident Insurance for the Men

The Dodge split friction clutch is to the employe what the \$25,000 accident policy is to the employer.

The Dodge clutch enables the manufacturer to drive his machinery in units—without expensive alterations to his present system.

In case of accident—when life and limb are dependent on instant action—the Dodge friction clutch is the only insurance the employe has that he will work tomorrow.

Any unit may be instantly disconnected from the main driving line and power which goes into idle sections of the factory saved by cutting off that section with the Dodge clutch.

A greater margin may be added to profits by breaking up the line of power into individual units, which can be run separately or as a whole.

The Dodge split friction clutch is standardized. It is carried in stock by branches and service agencies.

Get in touch with the Dodge Engineers and have them explain to you the safety, the efficiency, economy and the manufacturing standard which is possible only with the Dodge split friction clutch. If you would like further and more detailed information on the subject, we have an excellent book which is yours for the asking.

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Everything for the Mechanical and Economical
Transmission of Power

Mishawaka, Indiana

BRANCHES

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	St. Louis 408 N. Fourth St.	Portland, Ore. 14th & Lovejoy Sts.	

Trade Review

California.

Building conditions on the Pacific Coast have improved greatly within the last two months. April's record in San Francisco running over \$3,000,000 for the first time in a number of years, while Los Angeles showed a valuation of over \$5,000,000. That this condition will continue, at least in San Francisco, is indicated by the large number of buildings planned, and the fact that the first inquiries have come out for work on the new City Hall and the Municipal Auditorium. The brick market, after several months of quietness, is beginning to show signs of activity, as much of the local building has been in the line of hotels and fine apartments, for which brick is the favorite material. Two contracts have already been let, each requiring about a million common brick—the Polytechnic High School, and the U. S. Subtreasury; while the new City Hall is to be mainly of brick construction, with a stone facing. Large manufacturing plants outside the city are demanding brick deliveries and the market in the interior is keeping many country brickyards fully occupied.

The adjournment of the California legislature has relieved the anxiety of manufacturers over the prospect of many radical measures being incorporated in the state law. The bill which will have the most unfavorable effect will be that providing for workmen's compensation for industrial accidents, with a state insurance scheme and provision for the equipment of plants with effective safety devices. One other proposed measure of interest to local brick men was for the filling of Channel Creek, the waterway by which the leading brick manufacturers send their material into San Francisco, and on the banks of which many large distributing yards are located. This bill was fortunately defeated, and the channel will be kept open to navigation.

C. F. Pratt, who was for some years manager of the Golden Gate Brick Company, is now doing business under the name of Pratt Building Material Company, 205 Hearst building, San Francisco, Cal. In addition to common brick made at Sacramento, Cal., he is selling a general line of building material.

The McNear Brick Company, operating north of the Bay, has added a Bucyrus steam shovel to its equipment.

An electric shovel has been added to the equipment of the Port Costa, Cal., brick works.

James O. O'Connor, who recently started a brickyard at Plano, near Porterville, Cal., has just fired his first kiln of 200,000 brick, and expects to sell his entire summer output in Porterville and vicinity. Mr. O'Connor formerly operated in Arizona.

H. L. Irwin, who built the stack at the Great Falls, Mont., copper smelter, has been visiting the smelter district of Shasta County, Cal., in the interest of brick manufacturers, with a view to inducing the copper companies to overcome the fume trouble by building higher stacks.

The Vallejo Brick & Tile Company, Consolidated, has located its office, in charge of Will H. Wandesforde, in the Security Building, 343 Sansome street, San Francisco. The company is now giving most of its attention to the manufacture of face brick, putting out two lines trademarked as "Nu-Face" and "Ruf-Kut," the latter being a wire-cut brick. In view of its superior strength and fine color, the "Nu-Face" is gaining considerable popularity. Orders have recently been taken for 100,000 of these brick for the Ford automobile plant in San Francisco, and for 200,000 for the Native Sons' Hall at Napa, Cal.

Kentucky.

With a heavy and increasing demand for brick for building purposes, Louisville members of the trade are entirely satisfied with the results of the past six weeks as well as the outlook for the future. May was a very fair month in the material business in the Kentucky metropolis and deliveries grew better as the month advanced and the last of the factories that had been crippled by the floods, resumed shipments. Several new

brickmaking plants made their debut and the supply will be, it is thought, ample for all operations now under way or planned. Brick pavements are growing in favor and paving brick will be called for more in the future than in the past.

The R. B. Tyler Co., for the past several years located in the Lincoln Building, has completed its new home on Fourth Street, near Main, and is preparing for an aggressive campaign for brick orders in Louisville and such suburban residence and school work as is planned by Louisville architects. The brick display on the first floor of the company's new quarters is unusually handsome and comprises the best lines of face brick manufactured in America.

A new fire brick plant, that of the Louisville Fire Brick Co., located in Carter County, Ky., will be put in operation early in June, according to Secretary J. H. Bell. The new plant will have a daily capacity of 30,000 fire brick, which, combined with the Louisville plant, will give the corporation a total output of 100,000 daily. Practically all of the equipment has been installed at the new branch, in Grahn, and very little work remains to be done before this unit is ready to start.

George Feidler, well known to the brick manufacturing trade, has joined the staff of the new Coral Ridge Clay Products Co., having charge of the plant now under construction at Coral Ridge, as well as the offices of the company, which are in Louisville. Unusual interest attaches to the new plant, because of the innovations that have been incorporated in its machinery and mode of operation. Where days were formerly consumed in the making of brick, the new company hopes to cut the time down to the same number of hours.

The plant of the Louisville Brick Co., closed down for several weeks, has resumed operations and delivery. The April floods necessitated complete overhauling, which is now completed and the company is putting out its normal run of 40,000 common brick daily.

As the result of the completion of a new sewer in Louisville, in which vitrified clay segment blocks were used, this type will probably be observed in other sewer work to be undertaken in the near future. The first sewer to be constructed of clay segment block is located at Twenty-third street, from St. Louis to Lee, a distance of five blocks. Not only has the new material proven as satisfactory as others which have been used, but the cost has been a good deal lower. Twenty cents to \$1 a foot is the saving accomplished, according to statements by the Louisville Board of Public Works.

M. J. Bannon, of the P. Bannon Sewer Pipe Company, has returned to Louisville after spending four days with the boosters of the Kentucky metropolis, who recently made a jaunt into the Eastern section of Kentucky for the purpose of influencing some of the trade which has drifted away from Louisville to get back into its channel. The excursion was conducted under the auspices of the Louisville Commercial Club. More than a hundred business houses were represented. Mr. Bannon being the agent of the clay industry on the booster trip. He returned more than pleased with the reception accorded the visitors at every town. Outside of this part of the journey, results were obtained in a business way. Eastern Kentuckians promising to patronize their home metropolis wherever possible.

A. J. Jungerman, conducting negotiations with the sale of the plant of the Hydraulic Brick Company, of Louisville, in view, has several prospective purchasers in sight, and a deal will be consummated in the near future, probably. With the departure of officers of the company for the West. Mr. Jungerman was put in charge of negotiations, and the plant is expected to change hands in the near future. The brick-making equipment has been idle for several months.

After a delay of several weeks, work has been resumed on the paving of gutters on Third Street, from Broadway to Jefferson Street, with brick. The People's Brick Company, of Portsmouth, O., which held the brick contract for the city of Louisville, was a bit slow in shipping, while the railroads completed the delay by being tardy with the brick. The shipments, however, finally arrived

"Pioneer Machinery is simply the best,
And used in clay Products, it stands Every test;
Durable, high-class, efficient and true,
It does for its users what others Can't Do



REFERENCES:

Wm. E. Dee Clay Mfg. Co., Mecca, Ind.
National Drain Tile Co., Terre Haute, Ind.
Whitehall Sewer Pipe Co., White Hall, Ill.
Lehigh Clay Product Co., Lehigh, Iowa.
The Denny-Renton Co., Seattle, Wash.
The Gladding-McBean Co., San Francisco, Cal.
The Pacific Clay Products Co., Los Angeles, Cal.
W. S. Dickey Clay Mfg. Co., Kansas City, Mo.
Texarkana Pipe Co., Texarkana, Tex.
San Antonio S. P. Co., San Antonio, Tex.
Henry Stevens Sons & Co., Macon, Ga.
Pomona Terra Cotta Co., Pomona, N. C.
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in Louisville, and work will be pushed. The city officials were a good deal wrought up over the failure of the brick company to get the brick into Louisville on time. There was some talk of placing the contract, involving a half-million brick, with some other company. The fault turned out to be that of the railroads more than of the brick company, and the Portsmouth concern will continue to provide paving material.

D. S. Haggard, road commissioner around Winchester, Ky., has resigned that position, taking the management of the Winchester Brick Company. Harry Allan has resigned the management of the brick concern and will devote his attention to other interests. Mr. Haggard already has assumed his new duties.

The News in Brief

The DuBois (Pa.) Morning Journal of May 18th, under the headline "Main Street Paving Is Keen Disappointment," says: "It is a matter of keen disappointment to the borough authorities, property owners, and in fact all people having the interest of their city at heart, to note that the asphalt block paving on Main Street is crumbling away. When this street was paved with the asphalt blocks they were declared the best things on the market, combining many excellent features, including durability." DuBois—in the heart of a brick manufacturing district—shoemakers' children were ever unshod!

The Commercial Club of Fulton, Kans., has been approached by a tile manufacturer of Stotesbury, Mo., who will build a plant at Fulton if the proper inducements are offered him. Inquiries are now being made as to the possibility of developing a local market for drain tile among the farmers around Fulton.

The Indiana Paving Brick Works at Brazil, Ind., will start up again June 10, and have made improvements which, it is claimed, will do away with much of the obnoxious gases that have been the cause of so much complaint on the southwest side, in Brazil. The plant has been closed down since February.

A brick plant in Milldale, Conn., started shortly after 1850, has had time to grow, and now produces from 7,000,000 to 8,000,000 per year.

In addition to the manufacture of many high-grade facing brick in a large range of distinctive classes, Columbus, Ohio, has one of the largest plants in the United States for the making of common brick. This is the plant of the Columbus Contractors' Supply Company at Taylor's Station. It has a daily capacity of more than 100,000 brick or about 2,500,000 brick each month. Extensive improvements have recently been completed at a cost of \$80,000, but these have not brought the plant to a capacity adequate to the growing demand being made upon it, and plans are being made for further extensions to the plant with additional kilns and other improvements.

The Kansas Vitriified Brick Co., whose plant is west of Chanute, Kas. and which was closed on account of fuel shortage, has made arrangements with F. W. Steuck of the Chanute Zinc Co., and now have an ample supply of gas for brickmaking. The plant will resume at once.

J. C. Fowler and W. W. Hill, who have been associated together in the brick industry at Watsonstown, Pa., for the past three years, are to go to Paxton, Snyder Co., Pa., and assume charge of the Paxton Brick Co.'s plant at that place. M. A. Berger, now superintendent of the S. B. & B. Railroad is mentioned as Mr. Fowler's successor.

The Towl Brick Co., located on Bradley Road, just out of Cleveland, Ohio, has awarded contracts for the construction of a large addition to its plant which will add to its daily output of common brick.

Incorporation papers have been taken out for the Queen City Clay and Brick Co., of Buffalo, N. Y. The incorporators are Edward and John Schuesler, Stephen and Warren H. Bush, of Buffalo. The concern has a capital stock of \$50,000.

At the annual stockholders' meeting of the Reynoldsville (Pa.) Brick & Tile Co., a new board of directors was elected, which organized and elected Clyde C. Murray, president, H. N. Widdowson, vice-president, Margaret C. Stoke, secretary and Henry Herpel, treasurer. The property of the Sykesville (Pa.) Clay Products Co. was taken over by the Reynoldsville Co. under a three years' lease and that plant will now be operated as Plant No. 2 of the Reynoldsville Brick & Tile Co. It will add about 4,000,000 annual output to the leasing company, giving them a total of about 14,000,000.

J. B. Yowell of Dudley, Ill., ceramic chemist and graduate of the Ceramic Department of the University of Illinois, has direct charge of the manufacturing and burning on both plants. Mr. Yowell comes well recommended and has been giving excellent results, which reflects credit upon his former instructors, Prof. A. V. Bleining and Prof. R. T. Stull.

S. J. McClune, of Johnstown, Pa., has been elected general manager of the plant of the Savage Fire Brick Works at Meyersdale, Pa., and improvements are contemplated immediately which will increase the production of the property. Work with this end in view will be started as early as possible.

According to information received by brick salesmen in Pittsburgh, Pa., the plant of the Standard Brick Co., at New Cumberland, W. Va., will be reconstructed at an early date. N. W. Ballantyne, of the Diamond National Bank Building, Pittsburgh, Pa., is at the head of the company which will operate this property. He is now working upon improvement plans.

Duncan, Okla., has hopes of securing a mammoth brick plant, if the plans of a manufacturer now located somewhat to the north of Duncan finds that the investigations he is now making into the shale and clay deposits, the cheap fuel and excellent water which Duncan claims, justify the glowing descriptions given by parties interested.

The Kansas Buff Brick Co. of Buffville, Kans., has purchased the face-brick output of the Coffeyville (Kas.) Shale Brick Co., and will keep the fifteen large face brick kilns busy for several months to come. The Coffeyville output is about 600,000 per month and consists of round edge vitrified face brick. The Buffville company also takes one-half of the Coffeyville Co.'s output of common brick, which is about 5,000,000 annually.

Claiming that it will render their water unfit for use, the Iola Brick Co., of Iola, Kas., has filed a petition against the Iola Portland Cement Co., asking that an injunction be issued to stop the proposed opening of a gate in the latter's dam, which would allow the accumulation of cement and dust, now resting against the gate, to flow down into the lower reservoir, from which the brick company obtains its water supply.

Quick work upon the part of a number of employes saved the plant of the Ohio Valley Brick Co., at Vanport, Pa., from destruction by fire. There is no fire department in that place, and bucket brigades and hose attached to plant were used with success in saving the property.

Official notice has been issued of a receiver's sale of the plant of the The Sterling Brick Co., at Marietta, Ohio, which is now in charge of Receiver David H. Thomas. The personal property of the company is reported to consist of a large quantity of paving blocks, which have been appraised at various prices, and buildings, boilers and equipment complete are being offered for sale by the receiver.

J. A. Tormey, of 602 North 32nd St., Philadelphia, Pa., has left the employ of the United Brick & Clay Products Co. of that city and will start in business for himself, handling a full line of clay products. He wants a list of face brick manufacturers in Ohio, Pennsylvania, New Jersey and Maryland.



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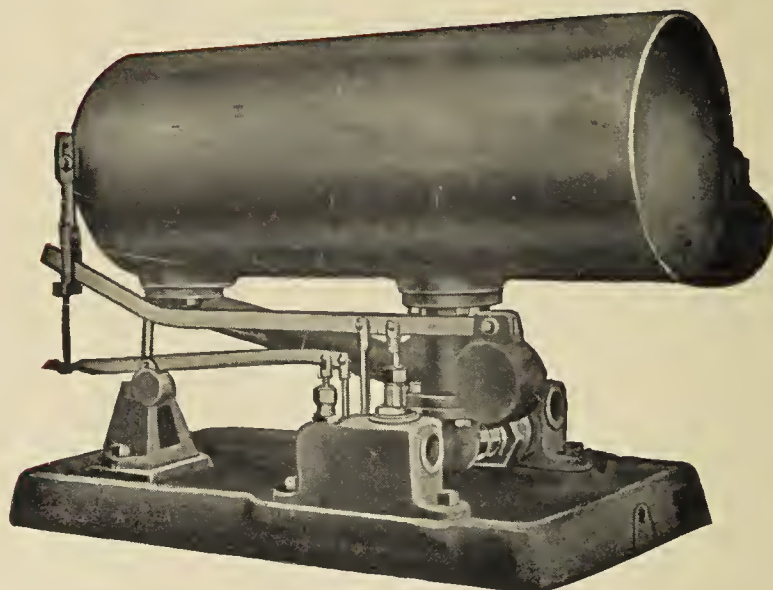
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Secretary-Treasurer American Face Brick Association



WHEN the American Face Brick Association passed a resolution empowering its directors to secure a secretary who would be to their association what the secretary of another large organization of brickmakers had proven in his particular field, some of the members were doubtful of their ability to find the proper man. The salary that would attach to the position was discussed and the statement made that \$10,000 a year would not be too much to pay a man who could do the work the association required.

A fortnight later, the executive committee met in Pittsburgh, Pa., and elected R. D. T. Hollowell, a native of Nashville, Tenn., secretary-treasurer of the American Face Brick Association. Offices were opened in Suite 514, Park Building, Pittsburgh, and Mr. Hollowell began the work of assembling the hitherto scattered interests that had formed a skeleton organization, into a solid, active, powerful body, with one aim—to do something to advance the interest of face-brick manufacturers.

It is worthy of comment that Mr. Hollowell has never been connected with the manufacture or sale of brick. He comes into office then, with no prejudice for one section of the country as in rivalry with another, no leaning toward one kind of brick to the detriment of another, no past affiliations to swerve him from a line of strict impartiality. His early training has been largely in connection with railroad corporations, an indication that the question of freight rates is prominent in the minds of the men who voted for Mr. Hollowell's election.

Men who have been connected with the early history of the various associations of manufacturers throughout the country, know that the assessment and collection of the amounts agreed upon at the time of organization has been, through the carelessness of the individual membership, made the most onerous duty of the salaried secretary. They have, fresh in their minds, the almost fatal effect of this holding back of funds on one association, that, starting out with brilliant prospects and capable management, all but died of starvation when its work had but begun.

The success of the American Face Brick Association and of the man they have elected to the secretaryship, will depend upon how close the membership will come to fulfilling its financial pledges, made last March in the Green Room at the Congress Hotel, in Chicago.

No one knows, better than the men who were instrumental in forming the American Face Brick Association, the need of hard, consistent work along the lines that have been discussed at its various meetings. First in importance, since it "begins at the heart of matters" is a proper and uniform cost-accounting system. It is, we know, illegal to combine or conspire to raise prices, but since the basis of all law is common sense, no harm can be seen in teaching manufacturers the real cost of their material—in its making, its selling and in its transportation, that, with real costs in mind, they may ask proper prices.

The American Face Brick Association expects to accomplish another end in cooperation with the newly-born Face Brick Dealers' Association. Many reforms of recognized worth are expected and an effort will be made to have the offices of the two associations used as clearing-houses for suggestions, complaints and adjustments between the manufacturing and selling end of the face-brick trade.

No association among clayworkers has ever started under sunnier skies. The men whose names form the roster of its officers and committees are the big men—the powers—in the face-brick trade. Its membership, none too large in the beginning, has shown a willingness to work for and with the men who have not, as yet, come in—knowing that success will bring the waverers into camp without an effort. Better than that, this small membership has pledged an amount sufficient to carry on the work they knew was so sorely needed.

And there is no doubt that they will keep their pledge and in so doing, give Mr. Hollowell a chance to do the real work to which they have elected him.



VOL. XLII.

CHICAGO, JUNE 15, 1913

Number 12

N. P. B. M. A. Picks Cleveland

Selects Ohio's Metropolis for First Convention to be Held Apart from the N. B. M. A.

From the birth of the National Paving Brick Manufacturers' Association, nearly ten years ago, its annual conventions have been held in conjunction with those of the National Brick Manufacturers' Association. This arrangement, however, has proven unsatisfactory to many of the paving brick men who are also members of the parent body, and who declare that two conventions at a time are one too many.

At the annual convention held in Chicago last March, it was decided to hold separate meetings in the future, and the action taken a few days ago, when September was selected as the date for the Tenth Annual Convention and Cleveland as the place of meeting, was in accordance with the wishes of a large majority of the membership.



THE tenth annual meeting of the National Paving Brick Manufacturers' Association will be held next September at Cleveland, Ohio, which for many years has been the Mecca for engineers, city officials and students of highway engineering who have wanted to learn just what is possible in the way of durability, economy and sanitation in properly constructed vitrified brick pavement.

The board of directors of the Association, meeting at the Association offices, Engineers Building, Cleveland, May 29th, settled on September as a time of year when the construction of brick streets in the city and country roads in Cuyahoga County and surrounding territory will be in full swing. This change from holding the meetings of the Association during winter months carries out the decision of the paving brick manufacturers at the meeting held in Chicago last March.

Following the precedent established at Chicago, the Association and individual members will invite engineers, officials and others interested from all sections of the country to attend its meetings and participate in the program.

The extensive brick plants about Cleveland and throughout Ohio will afford the visitors to the convention an excellent opportunity of seeing the transition of the shales and clays into brick, how shipments are made and the delivery of the finished product on the job. It is anticipated that the manufacturers of paving brick will take much interest in trips to these plants. The visitors will also have the opportunity of seeing a large variety of road and city street brick work throughout the north eastern part of Ohio.

The exact date of the Association's tenth annual gathering will be arranged at an early meeting of the office board of the Association.

The ranks of the Association were again augmented when applications for membership from the Western Clay Manufacturing Company, Helena, Mont.; The Scioto Fire Brick Company, Sciotoville, Ohio; Sharon Clay Products Company, Sharon, Pa., were favorably passed upon.

Secretary Blair reported that lectures at various educational institutions, and correspondence relating to all phases of street and highway improvement have required constant attention.

A committee consisting of Secretary Blair, Spencer M. Duty, of the Deckman-Duty Brick Company, H. C. Adams, of the Danville Brick Company, F. L. Manning, of the Peebles Paving Brick Company and Eb. Rogers of the Alton Brick Company, was appointed to discuss the rattler test specifications with Committee 3-C before the American Society for Testing Materials to be held at Atlantic City, June 24th-28th. This meeting will bring up anew the whole testing question—the rattler, manner and method of selecting brick for testing, and the entire subject incidental to the marketing of brick. All paving brick manufacturers are being urged to attend the Atlantic City meeting on account of the importance of the subject to be acted upon by the American Society for Testing Materials.

A long program occupied the attention of the board and although the day was bright and a hot baseball game was on the boards the directors stuck to the questions brought up for their consideration.

New York Brickmakers Win First Court Clash

Prosecution Drops Criminal Charge Against Twelve Defendants



FROM present indications a change in the nature of the prosecution instituted against the Greater New York Brick Co. will remove all danger of fine and imprisonment for the individual members of that company, limiting their possible punishment to a fine against the corporation and its ultimate dissolution. This phase was reached at the hearing of June 11, when the case was postponed to allow counsel and District Attorney to make the necessary changes, after consulting with Magistrate John J. Freschi, before whom the case was called.

The postponement was until next Thursday, June 19, at which time it is expected that the complainants, D. C. Weeks & Son and others, will be asked to concur in the new form of prosecution and, as Frank M. Patterson of counsel for the defendant corporation is willing to waive examination and go to trial at once, the District Attorney will doubtless be willing to have the form changed.

The penalty a conviction under the new procedure would carry, would be a \$20,000 fine against the defendant company, whereas a conviction under the criminal prosecution originally contemplated might subject the officers and directors of the Greater New York Brick Co. to an individual fine of \$5,000 and imprisonment of one year.

The directors and officers of the Greater New York Brick Co. are very prominent men in their respective communities, and it is the opinion of those very familiar with the case that no good result can be obtained by criminally prosecuting representative men who have believed right along that they have been within the law and have so been advised by counsel and have actually tried to keep within statutory limits, as stated at a conference in court. Conviction against the Greater New York Brick Co., as a corporation, will really accomplish the object sought by the complainants, as it will mean the dissolution of the company.

Even if the nature of the prosecution is changed it probably will be late fall before a decision is reached owing to the assignments of Magistrate Freschi. After Thursday's hearing the case must be postponed until late in July and from then to August.

Assistant District Attorney Pratt will cooperate with Mr. Ellison as prosecutor, representing District Attorney Whitman, and John B. Stanchfield, the great corporation lawyer, will be associated with Mr. Patterson for the defendants, while Ex-Deputy Police Commissioner Bert. Hanson of 42 Broadway, New York, will be associate counsel with DeWitt Warner of counsel for the plaintiffs. These are some of the best known lawyers in New York.

Face Brick Men Plan Revolutionary Methods

Proposing plans that will revolutionize the manufacturing and the selling of face-brick in the United States committees from the national bodies dealing with this branch of the industry will meet in Columbus, Ohio, June 17.

The program as outlined in the announcements sent out this week will discuss these important propositions among others:

A uniform standard in the manufacture and sale of face-brick.

An aggressive method of promoting the sale of face-brick, which probably will develop into a national publicity campaign of large proportions.

A solution of the many traffic problems.

These items, however, are only a few that will be discussed and undoubtedly the meeting will prove one of the most important in the history of the face-brick industry.

The associations to be represented will be: The Face Brick Dealers' Association, recently organized; the American Face Brick Association, organized less than a year ago and the Ohio Face Brick Manufacturers' Association. It is barely possible that other face-brick organizations like the Cleveland Face Brick Association

and the Chicago Face Brick Association will send representatives to confer with the major bodies.

The recently organized Face Brick Dealers' Association has issued a circular which gives the purposes of its organization and it is said that the eight items which make up the statement will be the ones largely discussed at the Columbus meeting. These items cover publicity in the transaction of business, the securing of information concerning the capacities and output of face-brick plants, to set certain standards of excellence to which manufacturers will adhere, to devise ways for promoting the use of face-brick, to correct traffic abuses, do away with unfair methods of competition and introduce the open-price policy.

The eight items constitute a "profession of faith" that is truly remarkable in its earnestness, forcefulness and optimism. It includes not only the determination to purge the brick-selling profession of its present jealousies, but to see to it that manufacturers do not, by misrepresentation of quality, of sorting or of time of delivery, put burdens on brick-sellers that rightfully belong elsewhere.

It takes a stand in the matter of freight rates, demurrage and delay that shows a spirit of aggressiveness that is bound to gain important concessions to the clay industry.

How to Get the Architects' Indorsement

Personal Advice from One Who Tells of His Experiences

By Richard H. Millson

Of the Firm of Thayer & Millson, Architects, Boston, Mass.

In the following article, which appeared in a recent issue of Printer's Ink, an architect explains the kind of advertising appeal that has weight with him when he makes up his list of specifications for a building. It is a meaty article and one that every reader of "Brick and Clay Record" should give deep consideration to.

Many manufacturers of building materials, it seems, do not have a very clear outline of what an architect's work is, or the conditions which surround the execution of his work. How to gain the active interest of an architect in your goods is a vital consideration if you are a manufacturer of any of the many products that enter into the erection, finishing or decorating of a building.

An architect is a man whose profession it is to conceive new buildings, and to transfer the conception to paper in various ways, in the shape of sketches and working drawings, with subsequent large-scale and full-size details of various portions of the work. These drawings form one branch of the instruments used to build with, the other being the specifications.

Strangely enough, so many advertisers consider only the specifications, their one frantic desire being to have their product specified. It is on this one point alone that thousands of appeals go directly into the waste basket. It does not seem to occur to these same frantic ones that the architect has got to know, among other things, whether the particular piece of apparatus or material can be located properly in connection with the rest of the construction.

This surely must be plain to all, and yet reams of literature come into the office, boasting, bragging and almost screaming the praises of this and that, while saying very little about real practical value of the product. An architect, when any assault by advertising is made on him, either wants the product at the time, or in the future, or not at all. If he should be wanting to use that same product at the time, he needs all the information about it. Everything to the smallest detail—the praise, of course, included—but more of the praise question later. If the product is one which may be wanted in the future, the literature which goes on file is that which has information of real value—rent is high and valuable space cannot and will not be given to printed matter which does not teem with concise interest and information.

Often an exceptionally clever effort comes before us, makes us read, and goes so far as to impress favorably, but it stops short just as we are ready to learn about the practical application of the product to some problem on hand. Should this particular effort be so clever or our need so great we set out to obtain by mail or some other cumbersome method, the dimensions, weights, colors, or what not. This means delay and very often misunderstanding, whereas the information might have been carried in the original appeal. It must be remembered that architects are supposed to be practical men, and it

is on this point that advertisers do not always discriminate. The specialist or expert is different from the general public; he sees things differently and looks for different information regarding products; therefore, he must be appealed to in a different way. This goes to prove that it is not well to worry too much about specifications. Remember that the plans have to be drawn, and it is then that much or nothing can come to the advertiser; if the product is included in the drawings they will naturally be specified.

I have before me a booklet from the National Fire Proofing Company, manufacturers of terra cotta hollow tile, which to the mind of the writer serves well as an example that avoids the mistakes indicated above. This book has been published in connection with a movement to build houses of a more durable material than formerly, and, in putting the whole situation before the architect, it has succeeded from beginning to end. It includes a concise digest of the history of this method of construction and its advantages, reliable comparisons of cost, and photographs of numerous examples of houses built and under construction.

In the closing pages are given most comprehensive dimensioned details of the construction, and testimonials from the offices of many well-known architects. This company has been carrying on a veritable battle of advertising in all directions during the last few years, but it is the above publication which they have put into the front of the fight where architects are concerned. "Natco Tile" is the name of this company's product, and they have put up such a vigorous campaign in advertising that "Natco" has come to be quite a trade term.

While speaking of this company, there is one other most important factor in their success as advertisers. Their excellent publication outlined above is followed up every month by undoubtedly the best house-organ put out by the building trade manufacturers. Bound with covers of most striking design, the whole magazine (for it can be called such) is one of good taste, interest, and real value. In its pages everything of importance pertaining to the product can be found, and we have come to look for its appearance with satisfaction. While such an excellent and vigorous campaign is being carried on amongst architects, a similar effort is being made to call public attention to the product through advertising in many mediums. These are good, and care has been shown in attempting to interest the layman rather than the specialist.

This splendid effort on the part of this firm has pro-

duced excellent results, as is evidenced by the numerous examples of fine work carried out in this method of construction.

In connection with these remarks it is interesting to note that three houses of this type of construction have recently been completed under the direction of the writer's office, the choice of materials having been greatly influenced by the advertising of the National Fireproofing Company.

There is one type of advertising which comes to the offices of architects in the form of leaflets, which tells of somebody making something, how good it is, and finishes by peremptorily saying, "Architects specify this." Most of this finds its way into the waste basket; it needs more than this to satisfy an architect for he is undoubtedly a dyed-in-the-wool Missourian, and mere telling does not fill the bill. Let it not be understood that the writer decries brevity and conciseness—the more of it the better (to use an Irishism)—but there must be enough of real tangible fact in any advertisement to make it of value to a professional man. It is when the matter contained therein is valuable that his attention is really drawn to it. In this direction it is well to consider what is valuable and what is not. Value to an architect in an advertising sense means something which will give him information of the product quickly, fully and accurately.

This brings us to another phase of the question. Many building trades manufacturers do not, it seems, realize the relation between architect and client in its full meaning with reference to the specifying of goods. When an architect specifies any definite fixed brand of goods he always has good reason to do so, in the knowledge that the cloud of mistrust through which the layman views the professional man has hardly yet passed away. When any particular firm's goods are definitely specified, it is nearly always when the architect has been enabled to solve a problem through the suggestion of the firm's advertising, and when the article works into the plans to greater advantage than the goods of competitive firms; or else he is convinced of getting certain results he is looking for, or is so assured by influence of advertising or personal experience that the goods are superior to others. These assurances are often the outcome of careful application to the drawings, or specifications of information contained in a firm's appeal in which the adaptability of the product may be considered in terms of feet and inches, or what you will.

This can be accomplished in many ways,—clear, concise matter, plenty of illustrations, and, where at all necessary, plenty of well-drawn dimensioned diagrams. Dimensions are things which the architect must consider; they are one of the most important directing forces he has at his command, and as one dimension bears direct relation to another, so must this be considered in all

products built into or used in connection with a building. Then the pamphlet or catalogue, be it ever so small, if it thoroughly explains the article, really becomes a textbook on the product in question.

So once more we can see how much the plan end of the business should be considered before the specification. It is safe to say that the manufacturers who realize this and make an appeal to the architect's practical sense are much more likely to break into the specifications than the man who is always saying, "Mine is the best, the best is mine, you can't get any better, specify mine."

Advertising through the medium of the weekly or monthly should be followed up by real vigorous effort along other lines, that the favorable impression gained in looking through a magazine may be developed.

Still another method of advertising is contained in "Sweet's" catalogue, published by the F. W. Dodge Company. This huge collection of miniature catalogues of every conceivable kind of material or apparatus used in building is systematized under various headings and indexed into one of the most

remarkable advertising agencies ever compiled. It courts inquiry from the fact of its thorough indexing and extraordinary range of subject; one rarely gets disappointed when an inquiry is made of "Sweet's."

There now comes another type of advertising which appeals in a most fascinating way and that is by models and samples. This impresses me as being really one of the best methods of direct advertising which exists and which unfortunately is not common enough.

There are in the office at the present time two small models of copper tile made to scale, which are "talking" yet, and will certainly continue to do so. With them came a small pamphlet with the story of this tile in concise and practical language,

leaving the models to do the rest. This was undoubtedly an expensive effort but efficient in every sense of the word.

The writer remembers seeing in England some few years ago a set of scale models of about fifty different drainage fittings for every conceivable use and position, which were, to his knowledge, actually doing duty as salesmen. Here the National Fireproofing Company again came to the front; in addition to the publications already mentioned this firm has sent us scale models of the various types of hollow tile they manufacture, which are most convincing, both to architect and client.

There are great opportunities along this line for manufacturers to get architects interested in their products. Here is a very practical example: There are some most artistic and wonderful things made now in tiles and faienceware for fireplaces, etc., which appeal very strongly to the architect and the artist, and he may praise these particular productions to a client; but how much more potent his endorsement might be had he some of



Scale Models of Hollow Tile Sent to Architects by the National Fireproofing Co.

the actual tiles to show. The samples would in many cases be a very efficient selling agent.

In considering the various kinds of efforts coming into the office there is one which is more than ordinarily interesting—the house-organ. I view it as a sign of well-applied energy when these journals come along each month, because one feels that back of the effort is pluck and perseverance, and, more, the advertiser's almost holy belief in his goods, which is really a quality that sells good goods.

Gives Praise to Natco House Organ.

These journals differ very much in their character and quality and it is very plain to see the difference in ability of the editors. There is one particular journal which continually stands on my mind as an effective model. This journal belongs to the National Fireproofing Company and is the one which I mentioned above. Known by the name, "Building Progress," it succeeds in a very able manner in putting before the architect all the latest detail in connection with building construction in the material the firm handles. One quality of this journal has done much to make it a success and that is the broadness of its outlook; it seems to understand the architect's viewpoint; it realizes his peculiar and complex range of vision, the artistic and mechanical, and succeeds in satisfying both. The articles are written to a great extent by men outside of the firm's staff, giving a different perspective on the subject than if written by men naturally biased on the good quality of their own product. The illustrations are numerous and interesting and cover a very broad range.

There are many other of these journals coming along, some of more or less interest, others of no interest at all. There lies on the desk a copy of the "Latch-String," the house-organ of the W. S. Tyler Co., of Cleveland, Ohio. This is a very nice little journal, full of interesting facts about other people and other things, all put together in a charming manner, but, strangely, it says but little about the W. S. Tyler Co., what they are doing and how they are doing it. Surely this interesting little journal might have more to tell us of the work of the firm and less of Benjamin Franklin or some other of the famous?

Benjamin Franklin was a most noteworthy man but the point is he didn't make iron gates and railings. The architect is a man who uses the time he has at desk or board in directing his energy toward the end of building something. Biographical studies of great men will not accomplish much in this direction.

There is now another aspect entirely different to those preceding which is very dominant in the writer's mind. It has been mentioned before that the architect's mind is a strange mixture of artist and mechanic; the observations already made deal more, perhaps, with the mechanic's side of his mind. The great truth, however, is that architects really, truly love the artistic. It is the road to their hearts, and appeals made through an artistic agency will undoubtedly succeed in gaining their sympathy and attention. Architects are men attempting to direct things mechanical along the road artistic, or vice versa as you will, but the artistic is the star ahead of them or should be, and their first impressions are much regulated from this standpoint.

The difference in individuality of the thousands of advertising pieces of all kinds is amazing. Some few show that good taste has been at the back of the work, others show an utter lack of understanding for all things

artistic, and flaunt in the face of the architect the most atrocious productions conceivable. It would seem that advertisers do not always consider that type or lettering may or may not be artistic or in good taste, they seldom show appreciation of a quiet color scheme associated with such things as dignity and quality. An artist cannot be appealed to by methods of blood and fire, but to his taste primarily, and so we see many good efforts not reaching their goal as they should.

There are, however, some examples which have come to the notice of the writer and his associates, which because they are so isolated, become the more remarkable, and which cannot be given too much praise in this age of effort to have all things done in better taste. In talking with other architects, the writer has found them quite unanimous in their good opinion of these examples, and it would be well to briefly consider them in their detail.

One of these is "Tapestry Brick Work," issued by Fiske & Co., of New York and Boston. Starting, the cover is of plain art brown paper, with the title in good type neatly combined with the name of the firm, and nothing more printed on the face of the covers. There seems no good reason why there should be more. The simplicity and directness of the manner of presentation is most admirable. The booklet is prefaced by an article on artistic brick work, by Claude Bragdon, F. A. I. A., which tells the history of good design in the use of brick work in the past, and of the best work done in our own day. The character of the product is then most interestingly told from all standpoints; then follows a schedule of sizes and shades, ending with comparisons of cost and methods of laying, etc. This matter is illustrated by remarkably fine photographs and reproductions of water colors especially designed to illustrate the use of the product which are of such quality that they themselves are bound to attract and hold the attention of a man of artistic temperament and having artistic work to do.

Architects Appreciate Sincere Efforts.

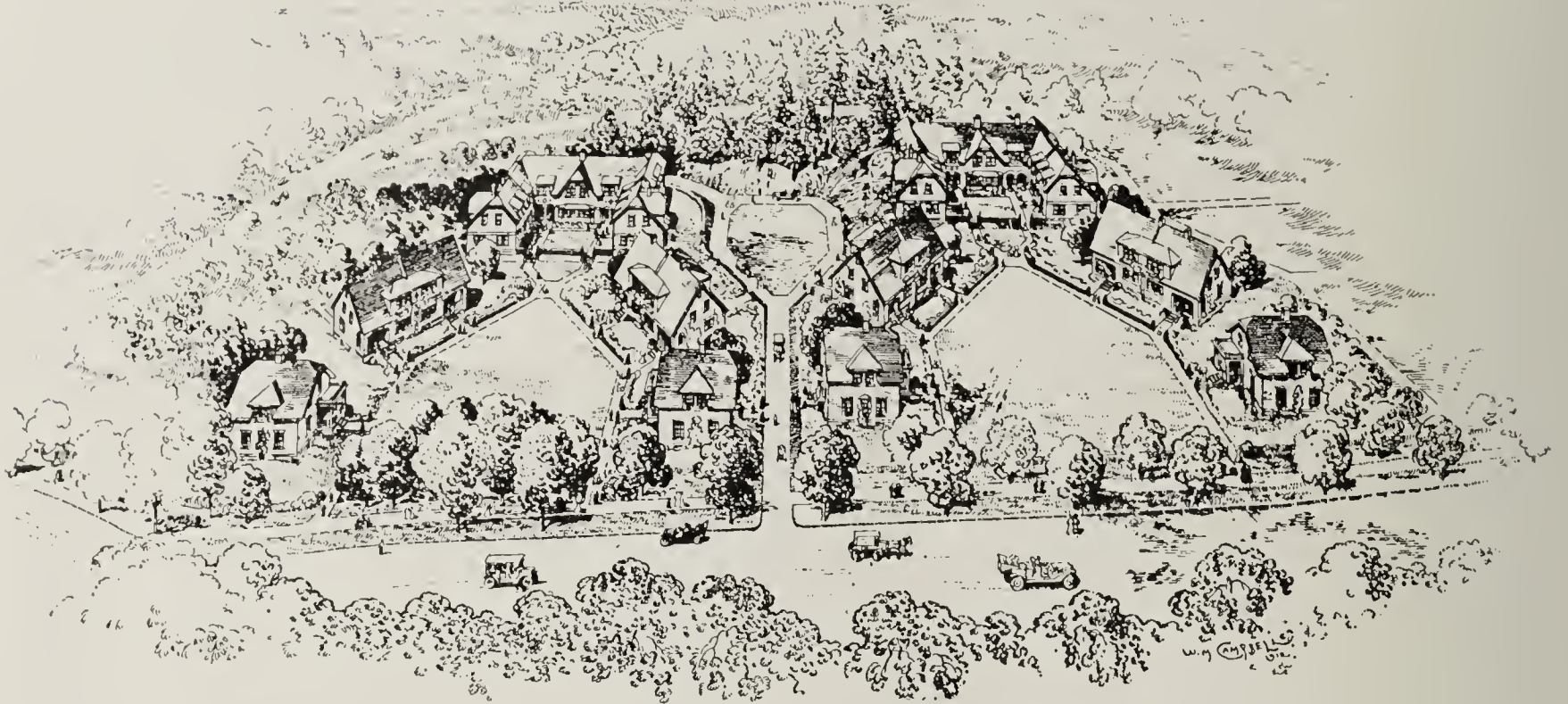
The few examples mentioned, of course, are just a very small part of the really good work which is being done by people who realize that the truly artistic has an important place in appeals to architects, and they serve to give courage that things will continue to grow better, as it is learned that such efforts are really appreciated and remembered.

In closing these remarks it seems to the writer that in reviewing this subject one comes to the conclusion that efforts should be made more in the form of practical catalogues, either large or small, rather than scraps of information. One unfailing proof of this is that the only literature on file in our offices which is really working as a selling agent is the collection of catalogues and pamphlets containing the information written and compiled as outlined in the preceding remarks.

(THE EDITOR wishes to add that Mr. Millson's remarks concerning the immense value of certain trade literature and the worse than uselessness of the remainder is a strong argument against one of the greatest wastes in the clayworkers' trade. Very frequently the only way you "meet" the architect is through your booklets and advertising. He is bound to be impressed with your personality and your business methods by the character of your literature. If it be blatant and vulgar, is it not natural that he judges you and your goods by it—and consigns both to the limbo of forgetfulness, thankful, the while, that the wastepaper basket is near at hand? It is a doubly strong argument for the employment of a trained advertising writer. You would not employ a novice to run your machinery, yet you, yourself, a novice at trade-writing, will insist upon writing your own "copy.")

HOUSES FOR BOSTON DWELLING HOUSE CO.
AT FOREST HILLS - KILHAM & HOPKINS ARCHTS.

ROBERT ANDERSON POPE
LAND & AIR ARCHT.



What Brick Houses Cost

HERE ARE THE ACTUAL FIGURES FOR EVERY
ITEM OF COST THAT ENTERED INTO TWEN-
TY-FOUR BURNED CLAY HOUSES THAT WERE
BUILT IN A BOSTON SUBURB LAST YEAR



REALIZING that there is a dearth of accurate information as to the real cost of building a brick house, we are, like History, repeating ourselves in publishing a second time the story of the Boston Dwelling House Company's improvement at Forest Hills, Mass. We gave some space to this subject in our March 15 issue, reporting the paper prepared for the Building Brick Association by Arthur W. Joslyn, the builder. The instance is so valuable, however, and so full of information for the brickmaker and brick seller, that we are going into the improvement in greater detail, hoping it will be of some aid to the brick man who is trying to prove the positive cheapness of building in brick after he has demonstrated the good qualities of the material itself.

Far too few opportunities are given the average brick man to show real figures. Architects' estimates are frequently misleading, as different architects include different features in their calculation; one figures the heating in, another figures the heating out. Different sections of the country have different customs in this regard and architects—particularly those who are in "prize competitions"—are apt to omit as much as they conscientiously can, in order that the building may look attractive on paper.

The brick trade is again indebted to J. Parker B. Fiske for the action he took, early in the history of this development, which made possible the accurate record and intelligent tabulation of figures that cover every item of cost in twenty-four brick houses of varying types. It is doubly indebted to Arthur W. Joslyn, who has given the figures and to Kilham & Hopkins, the architects,

who have shown their interest in the advancement of brick-built, fireproof homes, by permitting the publication of floor-plans and other data that prove the practicability, comfort-affording and eye-pleasing qualities of the small homes they designed.

Located within five miles of Boston, Mass., in the center of a circle that includes the Maine forests and the immense brick producing states of Connecticut, New Hampshire and Massachusetts, and exposed to the same labor conditions as exist in all large cities, these houses offer exceptional chances for the comparison of the initial cost of brick over frame. Presenting unique and particularly artistic types of moderate priced dwellings, they will be of value to the prospective builder who wants a well-laid-out plan and good exterior lines without paying a prohibitive price.

When it is understood that these buildings have slate roofs, copper flashings, modern plumbing and hot-air heating, combination gas and electric lighting and that the costs given are real costs, on houses that have actually been built, that they include a fair, although not large profit to the builder, it will be seen that they are of great importance to every man interested in the building industry.

In dissecting the figures given, due allowance must be made, however, for the fact that the operation included twenty-four houses, or to be more exact, twenty-four units of habitation, the single houses being counted as one unit, double houses as two units each and the six-family houses as six units. The houses were built in two groups, as shown in the landscape illustration, each group consisting of two single houses, two two-family-

houses and one six-family house. The elevations of each type were similar, but varying floor plans were used.

The Single Houses.

Four floor plans are shown, three having six, the other seven rooms. Both types are included in the schedule of costs given. It is well to recall that these houses, in common with the two-family and six-family types, are built with part stone and part concrete foundations,



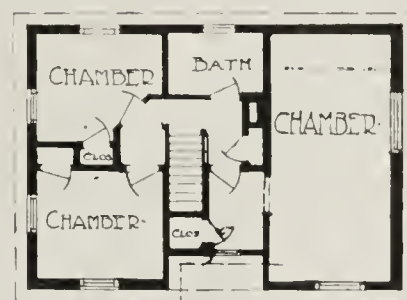
Single House, Costing \$3,667 Complete, even to the Window Shades and Wall-paper.

the cellar floors are concrete, the exterior walls faced with good quality face-brick, laid in white lime-mortar, that the frame studding is spruce, 16 in. on centres, the boards under the floors square-edge hemlock and the roof boards North Carolina pine. These points are mentioned to call attention to the fact that these houses are built of the best classes of materials that enter into the construction of moderate-priced homes—they are not "skin-built" in any particular. The costs on four single houses were:

	Total Cost	Cost per unit.
Excavation	\$ 1,058.87	\$ 88.24
Stone foundation	455.16	37.93
Concrete foundation	1,628.87	135.75
Drains	1,155.00	96.25
Grading	133.30	11.11
Common brick	4,895.20	407.93
Face-brick	4,424.91	368.75
Framing	2,116.90	176.41
Square boarding	501.13	41.76
Matched boarding	602.50	50.21
Studding	1,317.74	109.81
Setting iron	81.14	6.77
Outside finish	1,129.12	94.10
Fireplaces	142.49	11.88
Piazza floors	134.93	11.25
Upper floors	1,057.51	88.13
Concrete floors	356.94	29.75
Whitewashing	24.20	2.02
Coal bins	285.15	23.77
Medicine closets	73.65	6.14
Inside finish	1,373.18	114.43



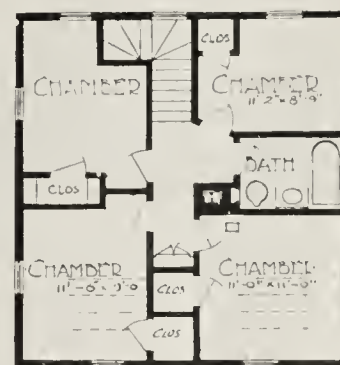
FIRST FLOOR PLAN



SECOND FLOOR PLAN



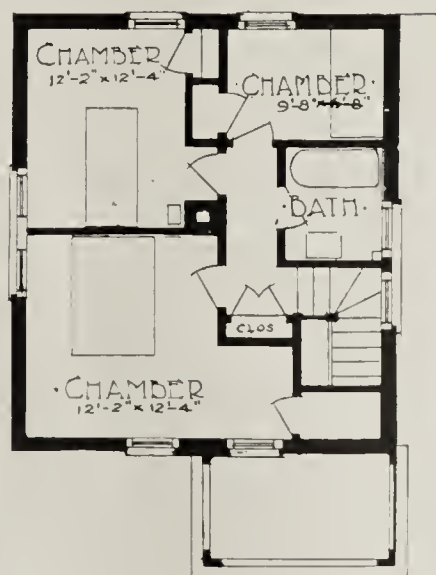
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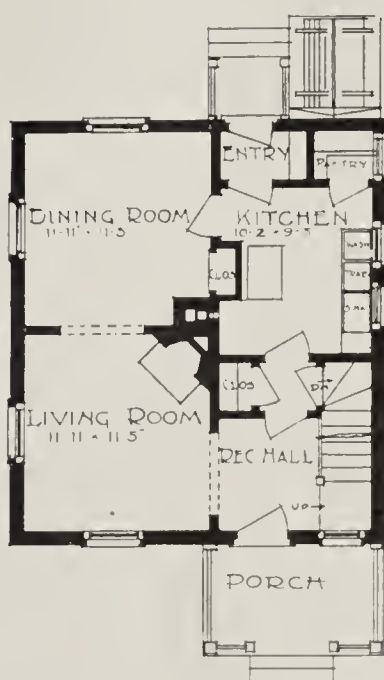
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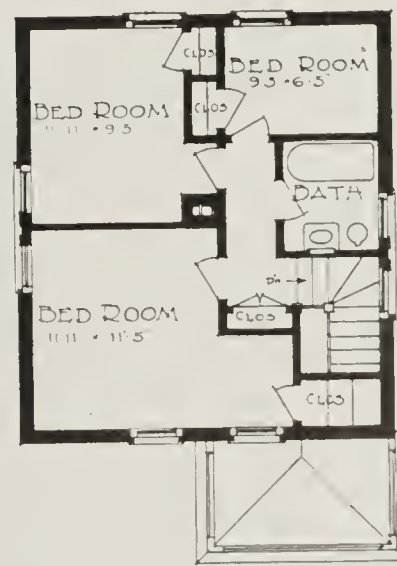
FIRST FLOOR PLAN



SECOND FLOOR PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN

Floor Plans of Four Types of the Single Houses.

Lathing	727.21	60.60
Plastering	1,842.50	153.54
Roofing	2,906.25	242.19
Electric wiring	684.40	57.04
Ranges and furnaces	1,374.00	114.50
Stairs	575.00	47.90
Painting	1,450.00	120.83
Plumbing	3,350.00	279.16
Screens	308.40	25.70
Curtains	108.00	9.00
Hardware	317.55	26.46
Electric fixtures	240.00	20.00
Papering	632.00	52.67
Picture molding	74.40	6.20
Doors	1,113.55	92.79
Windows	1,507.67	125.64
Concrete sills, etc.	249.60	20.80
Overhead expense	1,328.41	110.70
Cost per house		3,478.11
Cost per group	41,736.85	

The Double Houses.

In describing the materials that enter into the construction of these houses, it must be understood that the same description applies to the single houses and to

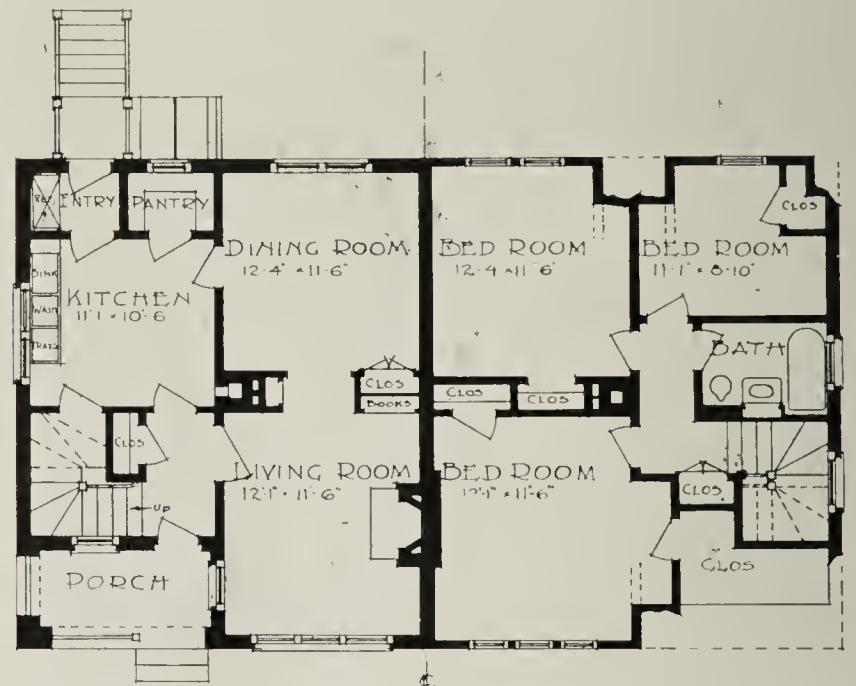


Semi-detached Two-family House, Costing \$6,290, or \$3,145 per family housed.

those of the six-family type. They are all built with 8 in. brick walls, have ample porches, inside brick-fireplaces, china-cupboard, dado and plate rails in the dining rooms, this woodwork being stained in attractive, dark tones. The living-rooms and halls are painted in white enamel. The best type of modern plumbing is used and the costs given include everything, down to the front-door key. The costs on the four double houses were:

	Total Cost	Cost per unit.
Excavation	\$ 352.95	\$ 88.24
Stone foundation	799.93	199.98
Concrete foundation	55.79	13.95
Drains	315.00	78.75
Grading	44.43	11.11
Common brick	1,287.61	319.65
Face-brick	1,441.84	360.46
Framing	601.35	150.34
Square boarding	143.87	35.97
Matched boarding	276.37	69.09
Studding	374.07	93.51
Setting iron	26.50	6.62
Outside finish	751.40	187.85
Fireplaces	61.01	15.25
Piazza floors	69.78	17.44
Upper floors	351.07	87.84

Concrete floors	94.55	23.67
Whitewashing	11.85	2.96
Coal bins	91.91	22.98
Medicine closets	24.69	6.15
Inside finish	347.55	86.89
Lathing	245.61	61.40
Plastering	614.15	153.54
Roofing	1,368.75	342.19
Electric wiring	224.13	56.03
Ranges and furnaces	458.00	114.50
Stairs	191.66	47.92
Painting	483.33	120.83
Plumbing	1,116.67	279.17
Screens	90.80	22.70
Curtains	32.00	8.00
Hardware	106.33	26.58
Electric fixtures	80.00	20.00



HALF FIRST FLOOR PLAN HALF SECOND FLOOR PLAN

Floor Plan of Two-Family Houses.

Papering	189.60	47.40
Picture molding	24.70	6.17
Doors	392.37	98.09
Windows	354.11	88.52
Concrete sills, etc.	83.20	20.80
Overhead expense	1,086.87	271.72
Cost per house		3,666.06
Cost per group	14,664.24	

The Six-Family Houses.

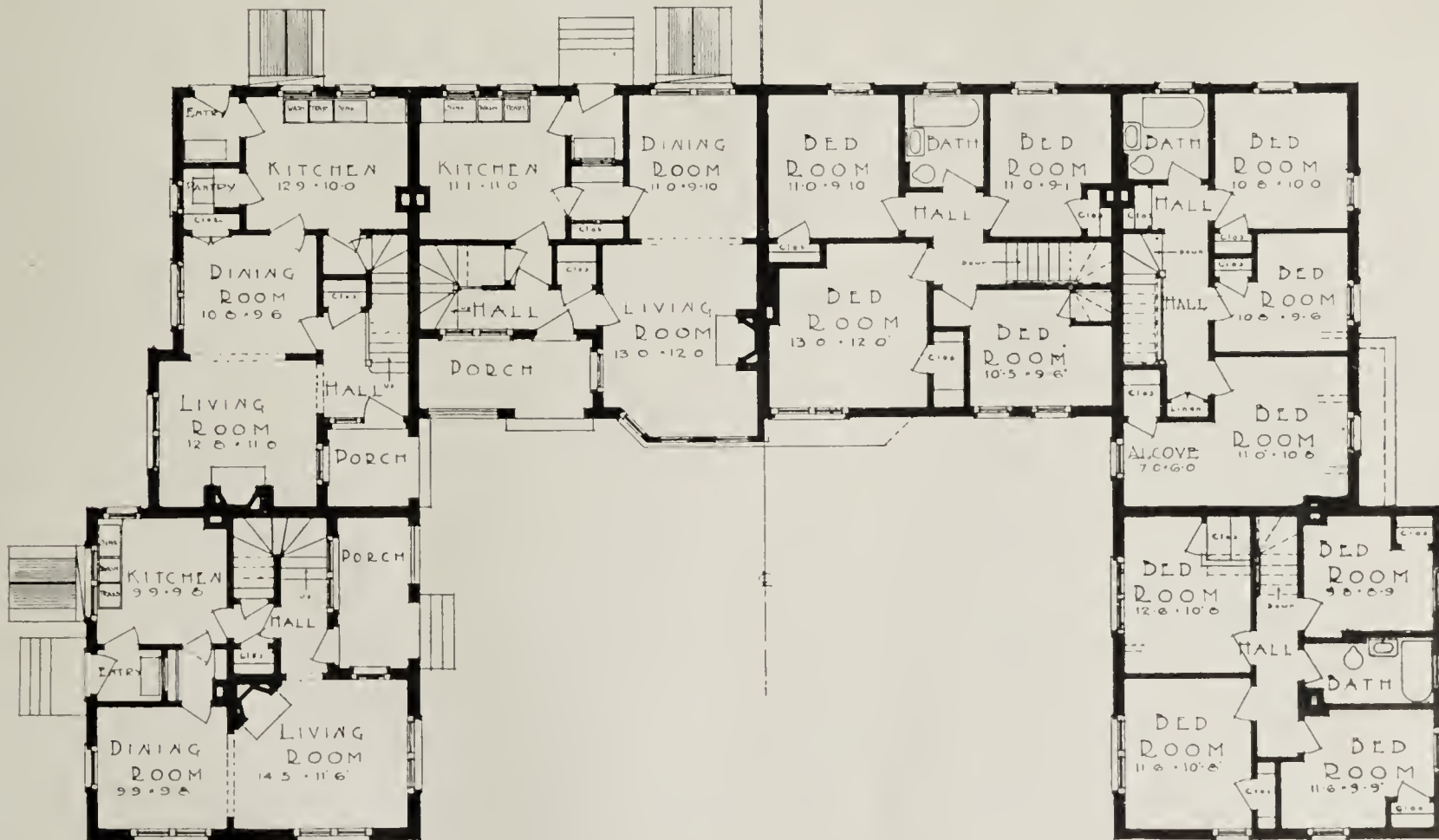
Surrounded by and facing parks and including a garden-like court, these houses, by their compact arrangement, give their owners an outlook that is out of all proportion to the low cost of the individual house. They breath the community spirit without sacrificing the privacy of their occupants. Four of the individual houses or units have six and two have seven rooms, the cost per house being averaged. They, like the single and double houses, are wired and piped for both gas and electricity and fixtures of good pattern, in keeping with the high character of the enterprise, have been installed. The heating system includes registers in every room. In the basement of each house is found a laundry and a store-room. The courts are provided with brick walks running around and connecting with each separate dwelling. The costs on two of these houses, consisting, in all of twelve separate housing propositions, were:

	Total Cost	Cost per unit.
Excavation	\$ 705.91	\$88.24
Concrete foundation	879.81	109.97
Drains	525.00	66.00
Grading	88.86	11.11



Block of Six Houses, or One Six-family House, according to Your Mode of Expression. The Cost was \$20,868, or \$3,478 per family housed.

Common brick	2,357.55.....294.69	Roofing	1,409.85.....176.23
Face-brick	1,885.89.....235.90	Electric wiring	454.77.....56.85
Framing	1,418.44.....177.30	Ranges and furnaces	916.00.....114.50
Square boarding	303.50.....37.95	Stairs	383.34.....47.92
Matched boarding	357.47.....44.68	Painting	966.67.....120.83
Studding	796.52.....99.56	Plumbing	2,233.33.....279.17
Setting iron	30.60.....3.62	Screens	197.60.....24.70
Outside finish	1,284.42.....160.53	Curtains	72.00.....9.00
Fireplaces	66.75.....8.34	Hardware	212.66.....26.58
Piazza floors	90.18.....11.27	Electric fixtures	160.00.....20.00
Upper floors	708.92.....88.63	Papering	379.20.....47.40
Concrete floors	249.20.....31.15	Picture molding	55.48.....5.93
Whitewashing	19.60.....2.45	Doors	644.98.....80.62
Coal bins	147.84.....18.48	Windows	765.04.....95.63
Medicine closets	47.52.....5.94	Concrete sills, etc.....	188.70.....23.59
Inside finish	1,247.45.....155.93	Overhead expense	1,207.64.....150.95
Lathing	488.21.....61.03	Cost per house	3,146.21
Plastering	1,228.33.....153.54	Cost per group	25,175.21



HALF - FIRST - FLOOR - PLAN - HALF - SECOND - FLOOR - PLAN -

GOVERNMENT DROPS SUIT AGAINST BRICK MEN.

Criminal Prosecution of Chicago Official and Paving Brick Manufacturers Dismissed by the Department of Justice.

Taking the ground that the statute of limitations had run against the offense, District Attorney Wilkerson moved for the dismissal of the complaint that at one time threatened to reveal "boodling" in Chicago's dealings with an alleged brick monopoly, in which, it was claimed, William F. Brennan, deputy commissioner of public works in the fourth Harrison administration, and former alderman D. V. Purington, of the Purington Paving Brick Co., H. S. Renkert, of the Metropolitan Paving Brick Co. and C. C. Barr of the Barr Clay Brick Co. were, it was claimed, implicated.

Brennan was Chicago sales-agent for the three defendant companies and it was asserted that once a year the three brick company heads met and fixed a price at which they were to sell brick to the city. In 1911 Mrs. Aileen Christopher brought suit against Brennan for alleged profits due her on the sale of paving brick to the City of Chicago, claiming that her husband, D. J. Christopher, who had been city brick inspector had, under an agreement which she claimed he had with Brennan, passed only such brick as Brennan sold.

Mrs. Christopher's suit was dismissed in the state courts and she then appeared before the federal grand jury. After she had told her story, she refused to produce a number of check stubs, and was sent to jail for contempt of court along with her attorney, John Brown.

"We found that charges under the indictment had been outlawed, so all we could do was to dismiss the suit," District Attorney Wilkerson said, after the dismissal was made in the United States District Court.

CLAIM RATES UNJUST AND TARIFFS VAGUE.

California Clayworkers Attack Southern Pacific Before State Railroad Commission.

Terra-cotta, tile, brick and pottery companies in San Francisco, Cal., and vicinity, backed by the Chamber of Commerce, are making a stiff fight against the Southern Pacific rate schedule on clay and clay products from the Sierra points, where the clay is dug and manufactured, to San Francisco. A hearing will be had shortly before the Railroad Commissioners.

The San Francisco interests claim that the foothill manufacturers have an advantage in the matter of rates; from Ione, Clarkston, Yuba, Carbondale, Lincoln, Clayton and Valley Springs the rate to San Francisco is \$1.25 per net ton, and the rate on manufactured products is precisely the same. It is held by the San Francisco manufacturers that the manufactured product is more liable to damage and that, being worth from two and a half to fifty times more than the raw material, the rate should either be lowered on the raw clay or advanced on the finished product. They claim that the clay rate, as compared with that on sand, gravel and similar commodities, is "unjust and unreasonable" while the Southern Pacific's schedule is called "inconsistent, ill-devised, inept, confusing and obscure."

A rate of 70c a ton on raw clay, to equalize the differences in manufacturing, is asked, and the Southern Pacific is asked to revise its schedule so as to make it more illuminating.

The companies concerned in the struggle are the Steiger Terra Cotta and Pottery Works, Gladding, McBean & Co., the Diamond Brick Co., the California Pottery Co., the Carnegie Brick & Pottery Co. and the Windsor Pottery Co.

URGE PROMPT ACTION ON TARIFF.

Pottery Men Ask Speedy Action to Secure Basis for Future Contracts.

Now that the potters are convinced that few, if any concessions will be made them when the Senate votes upon the Underwood tariff bill, they are asking that whatever action may be taken, it be brought to a climax at an early date, and so give them a chance to go ahead and make their contracts on a basis that will meet the changed conditions, if they are to be changed. Jefferson DeMont Thompson, a director in the Knowles, Taylor & Knowles Pottery Company, says "Congress should let us know right away what kind of a tariff we are going to have; whether there is to be a reduction or whether it will stay where it is. We are interested in china particularly and as we have the largest works in America, we are in a bad way." What a blessing it would be for this country if the tariff question could be settled, one industry at a time, and then settled for a period of years. If the term of immunity from change were long enough, the "you vote for my industry and I'll vote for yours" would not be so apt to hold legislation up until tariff-tinkering, not tariff, has become the country's greatest panic breeder.

UNBURNED CLAY BLOCKS USED IN MEXICO.

"Sillar" Blocks Three and Four Feet Square Cut From Solid Clay and Used Without Further Preparation.

Writing from Monterey, Mexico, deputy consul John C. Allen says that the material most used in residence and small building construction is "sillar," found only in certain parts of Mexico and consisting of blocks of hard, compact clay about three or four feet square. These blocks are cut out of the solid clay much in the same manner as ice is harvested, and are then used for building purposes without further preparation. The "sillar" is not to be confused with adobe, which is not extensively used in Mexico, the "sillar" being cheaper. The latter is used for side, end and interior walls, exteriors being plastered and then either whitewashed or painted. In the interior, the painting is done in imitation of wall-paper and no studding is used, as the "sillar" blocks will not hold nails. There is absolutely no woodwork except the doors, door-frames and window frames. Floors are made of cement or tile.

The roofs of the buildings in Mexico, with few exceptions, are flat. Strong wood rafters are placed with ends resting in the walls about two feet below the top of the wall. A tight board floor is laid over the rafters and covered over with six to ten inches of clay or cement, or both. Holes for water drainage are made through the walls at the level of the roof floor. The walls of the average houses are about eighteen feet high, allowing fifteen feet from the floor to the ceiling, inside, and one foot for the ceiling, rafters and roofing. This allows the walls to rise about two feet above the roof levels and Mexican roofs resemble great open boxes without covers. At the day's close these roofs teem with life and society is much in the public eye.

How We Sell Brick in Chicago

A COMPARISON OF
SELLING METHODS
OF TODAY AND AS
THEY WERE TWEN-
TY YEARS AGO

"We do not do the things of today as we did a score of years ago" is a trite saying and in no industry is this more true than in the clay field. Mr. Combs, the author of this article, is one of the most successful brick salesmen in the country and is especially well-equipped to make the comparison sought to be made here because his selling experience dates back many years beyond the period he discusses.

By Rogers M. Combs

*Vice-President and General Salesmanager of the Thomas
Moulding Brick Company, of Chicago*



HE singular fact is," said President Woodrow Wilson, in a recent speech, "that nothing is done in this country today, as it was done twenty years ago." Mr. Wilson had reference to political economics, but he might have applied his statement to any business or industry, to science, to art—and even to the selling of face-brick in Chicago.

Twenty years, in these days of rapid progress, is a long span. We live the experience of months in a day. Much can occur in the time it takes to make a voter out of a lusty lunged infant. Within two decades inventive man has given us the trolley-car, the electric light, the telephone, the phonograph, the wireless—wonderful achievements that increase our efficiency and make our lives easier and safer than in years gone by.

So accustomed have we become to the daily use of these wonder-worked and wonder-working indications of man's creative attribute, that we wonder how our fathers lived without them, almost doubting that they did. And, in the same way, we accept modern methods of selling as being ordinary, when they are as revolutionary, when compared to what they were in the last years of the last century, as are the inventions of Edison, Marconi and Tesla.

Who would have dreamed, twenty years ago, of selling organizations such as are now maintained in Chicago, devoting their energies to the disposal of face-brick and kindred materials, dividing the city into districts, and maintaining in each district a well-stocked yard, with switches to main trunk lines, where sufficient stocks of face-brick are carried, in many cases, to complete forty



buildings with as many different kinds and colors of brick?

Who could have foreseen, with eye on the brick salesman of bygone years—with one, or two or (to his sorrow) five or six bricks in a paper parcel, trudging the hot sidewalk or riding in "L" or street-car, to keep a doubtful appointment with some architect, contractor or owner, that today the same salesman or his younger successor would carry his prospective customer to the samples in a high-powered motor car, showing buildings, where he used to show single brick, and selling in the modern way—by the demonstration of his goods in actual use?

Who would have thought, at that time, of dividing the city—any city—into zones, in the centre of which lay a warehouse, a delivery system, and a salesman that, living in the district, is in touch with its peculiarities, its personalities—and its gossip?

Who could have predicted that in these same district headquarters, delivery systems would be maintained, teams, wagons and motor trucks, any one system large enough to have cared for Chicago's entire face brick demand, twenty years ago?

Not that Chicago was not building then, nor that it built in frame. Not that cement had even begun to make inroads on the material field—face-brick simply had not come into its own. A change came in the early nineties, with the advent of the impervious stiff-mud brick, which overcame, to a great extent, the one important defect in the face-brick that had been used prior to its coming—white discoloration or efflorescence.

Many theories exist as to the cause of this unsightly staining, but the fact that the old, porous dry-pressed brick showed it in ninety-nine per cent of the buildings they faced, while the impervious brick in less than five per cent, indicates that the porosity of the dry-pressed brick, drawing the free lime from the mortar joint, was responsible for the trouble.

And "trouble" is the correct word. Building is largely a matter of speculation, followed by investment. The banker who made building loans had to expect that a certain percentage of the buildings upon which he was advancing capital would, some time in the future, revert to him and, if they were so stained and "whitewashed" as to be disfigured permanently, it meant decreased valuation. To paint them meant an annual addition to the maintenance cost—how much easier it was to discard brick and build, for instance, in stone or some other material that would not begin to look old almost as soon as the first tenants moved in?

So it was an evolution in manufacture that produced the revolution in selling methods. About twenty years ago the selling agencies in Chicago received the first "impervious" brick, in limited quantities and a small variety of colors. The value of the new brick was quickly recognized and a demand created that made the selling of so meagre a supply as was then available, an easy proposition for Chicago's brick men. Brickmakers were quick to see this and factory after factory "changed over" and produced "vitrified" brick in a host of colors. The selling forces were obliged to quicken their energies to cope with what has grown into the present competition—a competition that demands a system as complex and complete as that which marks the sale of any commodity that comes into the Middle West.

When the number of textures and colors was limited, the number of samples shown were correspondingly small. An entire line could be shown in a small case or cabinet

and these, distributed among architects, served to show the product and secure the coveted orders. This system worked well until brick of one texture but of varied tints were produced and the vogue of "life in brickwork" began. One sample was inadequate and the "sections of a brick wall" where forty or more brick were laid in mortar, were found necessary to give an idea of the delivery. Larger and more elaborate display rooms came into being, panels and even sections of buildings, full size, were laid up in the brick selling offices. Architectural clubs began to recognize the new thought in brickwork and place was given in architects' exhibitions to panels of face-brick, laid in mortar and showing various bonds and arrangements of brick—bricking selling became an art.

In former times, after securing the attention of the architect or engineer, and their clients, to a certain kind and color of brick, we would give them the location of a building where such brick had been used, that they might judge its effect after the heat and frost and dust had toned down the contrasts and demonstrated the practical value of the materials used. Unfortunately, some of the buildings were never seen by the prospective buyer, as they were at some distance from the regular street railway system. Oftentimes, an order that was thought reasonably sure, was lost through a competitor's having a similar brick in a building more centrally located. This condition brought the horse and buggy and then the automobile, to the assistance of the salesman and, since the architects realized the value of the practical demonstration of merit the brick salesmen were offering them, they grew more and more willing to "jump right into one of our cars" and to see for themselves that the glowing descriptions of color and texture were in the brick and not altogether in the salesman's mind.

Where buildings showed the merit of the brick but the architect felt a desire to produce new effects in his brickwork, dealers were called upon to lay samples in a variety of different colored mortars, to invent new bonds or patterns in the work, to experiment with cement and lime and sand of varying grades of coarseness until they could show effects in brickwork that were undreamed of in the past. European cities have been visited, architectural libraries pored over, expert bricklayers weaned from the slap-bang and hurry-up methods of some years ago, and taught, by brick salesmen, to lay brick as did the Old-World craftsmen, two centuries gone.

The brick salesman of today is an encyclopedia of brick information. Controlled by a system that finds and tabulates the men who have the final word in the choice of material, they have become wonders of efficiency. They are trained to know brick, to know how brick should be used and what kind of brick. Where, years ago, they had little but a sample and a price, they have today a practical working knowledge of the material they sell and they aim to advance its interest by seeing to it that brick is selected, treated and used intelligently. Through the efficiency of the organization they no longer waste their time, nor that of the men upon whom they depend for business. They are welcome callers, since they appear only when they are needed—needed to display, demonstrate and explain a material in which they can, as a rule, "qualify as experts."

So much for the individual selling organization—much more can be said for the cooperative associations that have helped to make Chicago the premiere brick city of the country. The Chicago Face Brick Association, by the publicity given the thought that if face-brick was

none too good for the front of a house, it was just as good for the sides and rear, have made Chicago builders and architects subscribe to the "face brick all around" idea, and our buildings today have a sincerity that was sadly lacking in the days when face-brick were called "front-brick" for an obvious reason. The Clay Shows that have been held in Chicago during the past two years have given face-brick a place in the minds of the public that builds or will build in the future, that will continue to bear fruit for many years. The literature prepared and distributed by the Chicago Face Brick Association

brings home to the Chicago home-builder the fact that there is something behind the brick business beside the desire to secure the order—that it is in the hands of men who know brick to be what they are—the best building material available—and that their present popularity is a tribute not only to the men who make good brick, but to the men who have been and are selling them conscientiously, intelligently and with the purpose of maintaining the integrity of burned clay—the one material that has withstood the wear of the ages, the assault of devouring fire and the onrushing of mighty waters.

Five Years' Use Leaves Rope Intact

It is well known that rope drives do not often fail because of surface wear. Failure usually begins at the core, where the severest rubbing of fibre against fibre occurs. This may be proved by examining any such rope that has failed. It will be discovered that the core and inner fibres of the strands have worn into short lengths, or, if the strands are still continuous, into a very weak condition. Obviously, then, the proper way to preserve a rope drive is to "lubricate" these rubbing fibres and prevent them from grinding themselves thin and weak.

The illustration shows a 1,500-foot manila rope which for nearly five years was located out of doors on the roof of a high building in the open country, where it was exposed to storms from Lake Erie, winter and summer, and to all other hardships connected with direct exposure to sunshine, dampness, freezing, dirt, etc.



In Use on Roof and Exposed to All Kinds of Weather.

The owner of this plant employed Cling-Surface treatment as the method of preserving pliability, cleanliness, life and non-slipping qualities of their ropes. The success of this treatment is proved by the well-preserved appearance of the heart of a section of the above mentioned rope, after its five years of service. The only indication of wear is at the surface of the rope and this wear is so slight that its effect on the strength of the rope may be considered negligible.

As most engineers know, this sort of treatment is claimed, by its manufacturers to be chemically harmless to any animal or vegetable fibre, whether hemp, cotton

or leather, and is mechanically beneficial, because of its lubricating qualities. It does not make a rope or belt sticky, but penetrates into, lubricates, and makes pliable



Well Preserved Heart of Rope After Five Years' Continuous Outdoor Use.

and waterproof each tiny fibre all through the whole structure of the rope or belt to which it is applied. It is to these features that the above rope owes its preservation.

The resulting pliability thus assures close contact and firm grip on the driving and driven pulleys, power losses are minimized, the drive is rendered waterproof, both inside and out (rain cannot wash this treatment from the surface of a rope or belt) and initial tensions may be reduced to such an extent that free, easy running becomes practical, as in this case. The photograph shows that this rope was not under high initial tension.

How Cox Got Into the Game

SYNOPSIS OF PRECEDING INSTALLMENTS.

A dilapidated clay plant in Ohio is left Albert Cox, a young insurance solicitor, by his grandfather. Cox visits Mauryville with the idea of selling the plant to some one. Selling is his profession and he argues that any one who learns the principles of salesmanship should be capable of selling anything. He finds, however, that the clay plant has not been run for years and that the clay supply is exhausted. The machinery is antiquated and Sawyer, the old foreman, tells him it is only good for junk. Cox considers cutting up the land into city lots, but the gaping holes in the clay pit soon convince him that his task is hopeless, and he is about to give up in despair when he meets Charlie Simpson, a student at the state school of ceramics, who is home for the summer vacation. Simpson, in exploring the neighboring hills, finds an excellent deposit of clay on one end of the Cox estate. Cox becomes interested in the young man's enthusiastic report and, despite Sawyer's despairing advice, plans to turn the discovery to practical use. He obtains an option on the adjoining property and offers to sell his holdings to Brown Bros., a prosperous firm of clayworkers in a nearby city, which is seeking a new location. The eagerness with which the Brown Bros. take up his offer suggests to Cox that young Simpson was right when he said the clay was of an unusual quality, and getting a sample brick made he slips into Cleveland to consult an architect. It is his intention to verify young Simpson's claims with the idea of establishing a value on the property. To his surprise the architect is very enthusiastic over the brick and offers to take 200,000 on a 60-day delivery. On the impulse Cox agrees to furnish the brick. A visit to other architects gives him tentative orders amounting to 1,000,000 brick. This decides Cox and he determines to go into the brick business. He starts out to rehabilitate the old plant with the assistance of Sawyer and young Simpson. After a visit to the Steinway Brick Machinery Co.'s plant at Pressville, Cox selects his equipment and for two weeks work is pushed night and day in the new plant. The severe strain soon told on the men and Sawyer and young Simpson finally clashed.



HERE was a dangerous gleam in Young Simpson's eyes as he sprang at Sawyer. He drew back his clenched fist and the old Superintendent instinctively threw up his arms to ward off the blow.

Suddenly Simpson dropped his hands. With a movement as quick as the one that brought him to Sawyer's side, he wheeled about and started to walk away. Sawyer, evidently as much surprised as any of us, hesitated only a second. With an oath he seized the youth, but I had anticipated his intention and stepped in between them.

"Sawyer, for God's sake hold your temper!" I yelled at him, thrusting Simpson to one side. It took three of us to keep Sawyer from springing at Simpson.

Ordering the men back to their work I led Sawyer toward the little shed that did duty as an office.

"Just a moment, Mr. Cox."

I looked back. Simpson was approaching us and I motioned for him to withdraw.

"I want to apologize to Mr. Sawyer."

Simpson's face was white but he was showing a remarkable calmness in view of the exciting scene of a few minutes before. Holding out his hand to Sawyer he squared off before him.

"Won't you accept my hand?" he asked. "I was in the wrong."

Sawyer glared at him.

"To hell with you!" he snarled and walked back into the plant.

I stepped forward and grasped Simpson's extended hand.

"Don't mind him," I said. "He'll get over this after awhile."

"I made a fool of myself, Mr. Cox," replied Simpson

BEING THE STORY OF A YOUNG MAN WHO FELL HEIR TO A RUN-DOWN CLAY PLANT

By Iverson C. Wells

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quietly. "It humiliates me to think that I lost my head in that manner."

"We've all been under pretty high pressure the last week or so, Simpson. It's a wonder someone hadn't exploded before this. Don't let it worry you. Go back to your work and act as if nothing had happened."

Simpson did as I bid and an hour later when I went through the plant even Sawyer seemed to have forgotten the incident.

Simpson's ability to control himself in the face of a great provocation raised his stock in my estimation about 90 per cent. I have always maintained that it is only the fool that looses his head. The man that keeps cool usually is the one that comes out ahead.

Two days later I decided to run into Cleveland and look over the field a little. Henderson, the architect, was visited first.

"How are you getting along down at Mauryville?" he asked as I took the seat he proffered.

"Fine!" I answered.

"You will be able to make that delivery, will you?"

I assured him that the 200,000 brick would be on the job on the morning of September 12th.

"I've got another job for which I want to use your brick, but the plans are not completed. You'll hear from me in a few days."

That afternoon, while making the rounds among the architects I ran across Hobson, a representative of one of the Chicago dealers.

"You're the man that's making that golden yellow brick, aren't you?" he asked. "Got one with you?"

He took the sample I brought with me and I saw a brightening of his eyes as he examined it.

"It's a corker!" he exclaimed. "Cox, I can sell all of these you can make."

I smiled and he turned on me with just a little injured tone in his voice.

"Don't you believe me?" he asked.

"Well, yes," I answered. "That is, you might at my present capacity, but you must remember there is a lot of shale out there in Mauryville and the machinery people are still making machinery."

"What do you mean?"

"I mean that I can build more plant any time it is necessary."

"Oh!" exclaimed Hobson. "Well, perhaps you will get the chance to do a little building. I'm going back to Chicago tonight and I'd like to take this brick with me. I'll let you hear from me in a day or so."

Two days later Hobson surprised me by appearing in Mauryville.

"I came to close that contract," he told me as we walked towards my office.

When we had got seated and both had lighted cigars I told him I was ready to hear his proposition.

"We want to take your entire output," he said quietly.

"Of this plant you mean, of course?"

"Well, yes. We'll take the entire output of this plant."

"That's about 400,000 per month," I answered.

"We can sell them," assured Hobson.

Hobson evidently had come prepared, for he drew out a contract all ready for signatures and handed it to me.

There were several changes to be made in the papers offered me. For instance, I had decided on a certain selling campaign in which a registered trade mark on the brick was a part.

"Every brick you sell for me must be sold under this name," I told Hobson.

"That's perfectly satisfactory to us," he replied.

Later in the day, after a consultation with a local lawyer, I submitted Hobson the corrected contracts and we signed them.

The next morning I took the first train for Pressville. When Steinway saw me he jumped at the conclusion that something had happened at the plant. I suppose the serious look on my face gave him that suggestion.

"Everything is running fine," I assured him. "I came to buy more machinery."

"More machinery!" exclaimed Steinway. "Why, man, you've got more now than you can run."

I drew the Hobson contract from my pocket and handed it to him without comment. Steinway looked it over carefully.

"Well, I'll be blown!"

He sat staring at the paper and then slowly handed it back to me.

"Cox, you certainly are lucky! You seem to fall into things."

"As a matter of fact, Mr. Steinway, that Hobson contract is not an accident, as you suppose. I've been quietly at work on that for nearly two weeks, or ever since we bought that machinery of you. You see, in looking over one of the trade journals I ran across an article about the Second Annual Clay Products Exposition in Chicago in which the work of the Chicago Face Brick Association was described. According to that article one of the Chicago dealers represents thirty-five plants, these being scattered in various sections of the country. I got in touch with some friends in Chicago and laid my plans to interest at least one of these dealers. Guess my bait must have been pretty good because it didn't take Hobson long to make up his mind when the time came."

Steinway listened to me without interruption.

"I can see that most of your good luck comes as a result of going after things, eh?" he commented.

"I have never got anything that I did not have to work for," I answered.

We discussed the brick situation at length and I soon saw that Steinway kept a pretty close touch on the pulse of the clay product industry as a whole.

"Mr. Steinway," I said, drawing back to the subject which I came to discuss with him. "What about that machinery?"

"I should think that you ought to be satisfied with selling that 400,000 per month," he replied. "Most fellows would."

"No, I am not contented with that," I answered. "If I can sell 4,000,000,000 that's what I want to do."

"You are ambitious, Cox—very ambitious."

A smile spread across Steinway's face, but I gave no indication of having noticed it.

"Selling is my game, Mr. Steinway. The more I get into this brick business the greater possibilities I see ahead for me. It may cause you some amusement but I

have a vision of seeing a string of brick plants with the Cox imprint on them covering the country."

Steinway looked at me as if he thought I was crazy.

"And you've been in business only two or three weeks and haven't even made a brick!" he exclaimed. "Well, dream ahead, my boy."

"How about that machinery?" I asked ignoring his reference to my inexperience.

"What do you want?" he asked.

"I don't know yet. I merely wanted to see if I could make a satisfactory arrangement with you before I made any plans."

Steinway thought a moment before he replied.

"Cox, when you came to me the other day, you had positive orders in hand that would protect me. Your proposition today is different. You are trying to buy machinery now on what you believe you can do."

"You're wrong, Mr. Steinway. I merely want to know if you will let me have the necessary credit in case I come to you later and show you advance orders to justify it. I want to know if I will be able to take care of the orders when I get them."

"Get the orders and come and talk to me," was his laconic reply, and as he had risen I took the hint and bade him good-bye.

I returned to Mauryville with the determination to put into play some plans I had been turning over in my mind. It was away late into the night before I retired, and I suppose I had been asleep scarcely half an hour when I was awakened by a bright glare that came through the window and struck me full in the face.

I sprang to the window and looked out towards the plant across the road. The east end of the frame shed that housed the brick machine was ablaze. As I turned to get into my clothes I saw a shadowy form run from the building. The next moment I had slipped into my trousers and seizing a revolver rushed from the house.

Others had been aroused in the neighborhood and by the time I got across the road a small army of volunteer firemen were hurrying to my assistance.

As the flames grew in their intensity and lighted up the surrounding lot I saw the same shadowy form I had observed a moment before running across the abandoned clay pits. Without a moment's hesitation I raised my revolver and shot. The first bullet took effect and the fleeing fellow dropped.

Crying out to some one to attend to the wounded man I rushed to the work of trying to save the plant. My only fire protection was a small gasoline engine and pump. We soon got this going and it did not take us long to extinguish the blaze. A hurried examination showed that, with the exception of a belt conveyor that was pretty badly damaged, none of the machinery was injured.

"How about that fellow I shot?" I asked some one. "Was he hurt much?"

"They're taking him into your house, now."

"Better get a doctor quick," I cried back to one of the pit men as I rushed across the road to the house.

I stepped in the room where four or five of the neighbors were bending over an unconscious form on the bed, staying a flow of blood from a gaping hole in the neck. As I bent forward to see how serious the wound was I stepped back in astonishment. The victim of my shot was old Sawyer.

(The continuation of this story will be found in the July 1 issue.)

Vases 3,000 Years of Age

TEXAN BEQUEATHS PRICELESS ANTIQUES TO STATE

These antique vases, dug from the ruins of ancient Troy, repose in the museum of the University of Texas, the gift of an eminent native collector. They stand as a monument to the art and skill of the Aegian civilization and a proof of the imperishability of burned clay

lime. I gave them a bath of muriatic acid and rain water and thus cleaned them. No one knows the date of the destruction of Troy. Herodotus puts it (by Egyptian accounts) 500 B. C. I think it is older. I spent two days at the excavation of Troy and believe its destruction was contemporary with the Aegean civilization. From recent explorations at Clossus in Crete, it appears that the Aegean civilization, which closed with the bronze age, was marked with "incised white-filled decorations of pottery." One of these vases, excavated twenty feet below the surface, has that incised white-filled decoration. These are the only genuine Trojan vases in America."

The excavations at Troy were conducted by Dr. Henrich Schliemann, a German scholar who resided for many years



One of the Trojan Vases Willed to the University of Texas.



Specimens of Pottery More Than 3,000 Years Old, Excavated From Ruins of Ancient Troy and Presented to the University of Texas.



By the terms of the will of the late A. W. Terrell, of Austin, Texas, who served as minister to Turkey during the second administration of President Cleveland, the University of Texas has come into possession of three genuine Trojan vases. They are the only real vases of the Trojan era in America. It is said there are only two other vases which were dug from the ruins of Troy, in existence, and these are in the Ethnological Museum in Berlin, Germany. In a codicil to his will, Judge Terrell made the following provision:

"To the Texas state university I give three antique, genuine Trojan vases, presented to me by my consular agent, Mr. Frank Calvert, who lived at the Dardanelles and owned the site of ancient Troy. He co-operated with Schliemann in excavating at Troy and obtained the two ornamented with figures from what Mr. Schliemann thought was King Priam's treasure house. The black one without figures was deeper down and Schliemann thought it was from the debris of the oldest or first city. All were covered with carbonate of lime, the inside of the broken vase still being coated with

in St. Petersburg. He accumulated a large fortune, much of which he spent in the excavation of the ancient city. The exploration work at Troy was begun in 1870 and extended over a period of twelve years. He was assisted by Frank Calvert who owned the mounds of Hissarlik in Asia Minor that covered the ancient metropolis. No one, of course, knows how old these vases are, but that they were made in a civilization of many ages ago is a well established fact.

Two of these wonderful antique vases are said to be part of the treasures of King Priam. This would make them date back more than 3,000 years. They were mute witnesses to a civilization of which the people of today have little knowledge. Perhaps they were prized ornaments in the grand palace of King Priam. While many remnants of pottery were unearthed, but few entire objects of this nature were found, which adds to the rarity and value of the three vases which have come into the possession of the state university of Texas. So highly prized are these ancient relics of burned clay that a special vault is being prepared for them in the new fireproof library building of the institution.



The 1913 Model in Face Brick

LIKE MANY OF THE NOVELTIES IN TEXTURE THIS NEWEST CREATION WAS AN ACCIDENT

By Frederic W. Donahoe

Associate Editor "Brick and Clay Record"

It is proper to say that the following article was prepared by Mr. Donahoe for this journal before he became a member of its editorial staff. Mr. Donahoe was then sales manager of the Everhard Company, of Massillon, Ohio, and the "Dubltex" idea originated with him. This article gives the editor an excellent opportunity to introduce him to our family of readers.



EVERY year brings a new departure in face-brick, due, it is said, to an evolution that is taking place and which will result in a few—very few—meritorious types being adopted. "Evolution" would indicate slow growth and consequently is rather badly chosen to express the condition.

Much of the "evolution" has been accidental, or due to the tendencies of different clays to act differently under the same conditions. A paving-brick manufacturer splits his block and, the wire becoming slack by accident, a fan-shaped texture results; in order that each brick might be branded with a trade-mark on its bed, the factory at Ridgway, Pa., found it necessary to end-cut a rough-face brick that had, hitherto, been side cut, and this gave "Tapestry" brick its vertical texture.

A plant that previously made only smooth-face brick enters the rough-face field by stretching a wire across the mouth of the brick machine; the product is either similar to something someone else makes, or it is a novelty, depending upon the character of the clay, the coarseness of the grinding, the plasticity of the column and the position, gauge and "twist" of the wire. Few novelties are the result of forethought.

The heavy vertical scoring that reached its highest development in 1912 was doubtless carefully thought out and experimented with; in that particular it differs from the accidentally obtained textures, and indicated a desire to "get something new" rather than a wish to invent or create. It was a radical departure but not an altogether radical improvement.

A series of accidents produced the "1913 Model"—a combination of vertical and horizontal textures, and it may be, that because accidental, the brick which I named "Dubltex" has proven an artistic and financial success. A glance at the illustration will show both textures and, one brick having its horizontal texture turned away from the light, shows that this secondary (horizontal) texture is really there. It is hard to exaggerate the importance



F. W. DONAHOE.

of this secondary texture, since it diffuses the vertical scoring, which, alone, has a tendency to "stripe" the wall with vertical lines of mechanical regularity. It does not, however, take anything away from the one point in favor of vertical scored brick as a whole—that they add interest to a wall that is being viewed from side to side, at or near the level of the eye.

As I have said, the secondary texture was accidental. We started to make a vertically scored brick, using, for the purpose, a wire from our cut-off, around which we wrapped and twisted another wire. The twists or wraps were purposely made at varying distances, as are shown in the illustration. In making the experimental brick, the clay col-

umn was allowed to run soft, possibly because the pug-mill boy was wrapping more wires. So soft did the column become, that eventually it buckled, but not until we had secured a dozen or more green brick, and before the clay bar went astray it did its part in "inventing" the new brick.

Little ribbon-like pieces of the soft top of the bar clung to the wires in the spaces between the twists, and the minute horizontal spaces between them. This gave a distinct horizontal texture to the fields which otherwise would have been but slightly roughened.

Much of this secondary texture was lost when the clay bar was given its usual stiffness; it can be retained, however, without any danger of column-buckling, by spraying the top of the bar at a point sufficiently far from the twisted wire, to increase the plasticity of the top surface of the bar without changing the nature of the column itself. The arrangement shown in the illustration is thoroughly practical.

The wires that roughen the ends of the brick are placed at the mouth of the brick machine as usual, and this separation of the top and side wires preserves the rectangular shape of the brick.

The vertical scoring permits another valuable improvement in that the wire which cuts the face of the brick may



Brick Machine Equipped with Sprinkling Device to Soften the top of Clay Column Before the Surface is Roughened by the Twisted Wire.

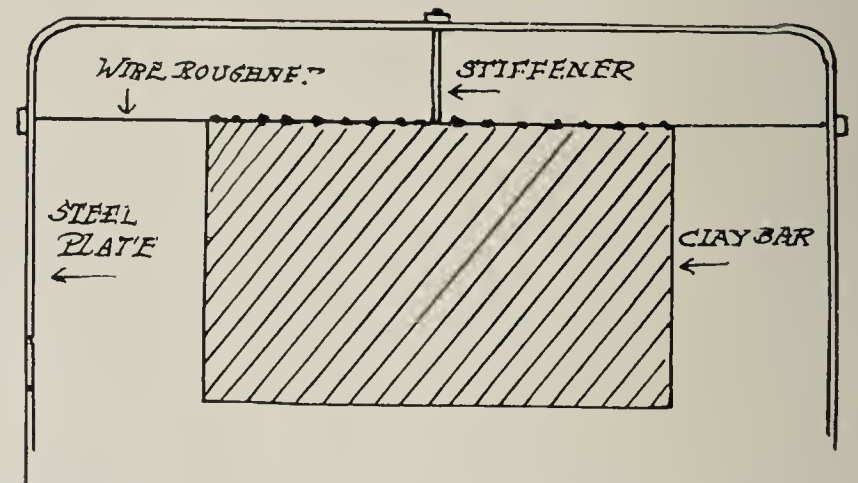
be held in place by a stiffener, so assuring a face that will be at right angles to the beds and heads of the brick. The mark of the stiffener is simply another vertical line and is not seen in the finished product. If necessary, two or three of these stiffeners may be used, but arrangements should be made whereby they can be placed at different



The Twisted Wire, Made of Cutting Wires, One Being Twisted, Wrapped and Knotted Around the Other.

points in the steel plate, and changed from day to day, so that no one day's run will have vertical lines in exactly the same place as did the brick run out the day before.

Care should be exercised to prevent regularity in the vertical scoring. This can be done by having the doubled wires twisted and wrapped by hand, several wires so prepared being ready for use at all times, not only to replace one that may be broken, but to change at least once a day. The subsequent shuffling that the brick receive, from dryer to kiln, to shed, to car, to wagon, to scaffold, will guard against any two brick of the same scoring being built into any part of the wall where, through proximity, their similarity might be noticed.



Showing How Wire May be Stiffened to Prevent Brick Having a Convex Face.

NEW YORK BRICK DEALERS CONSOLIDATE.

Form New Copartnership Under Firm Name of Fredenburg, Lounsbury & Houghtaling.

Two of the largest face-brick distributors in the East merged this week and will hereafter do business under the name of Fredenburg, Lounsbury & Houghtaling at 381 Fourth Avenue, New York city. Fredenburg & Lounsbury have been identified with the face-brick business in New York for nearly twenty years, having taken on the Hydraulic-Press Brick Co.'s line during the first year of their business career. They are recognized as being among the most successful face-brick dealers in America. Houghtaling & Wittpenn, from which firm Edwin M. Houghtaling goes to join forces with Fredenburg and Lounsbury, was organized about ten years ago, opening offices at that time at 44 East 23rd Street, New York. Mr. Houghtaling has been identified with the Foster interests at Bradford, Cowanshannock and Lewis Run, Pa., and recently secured controlling interest in the East Brady (Pa.) Upper Kittanning plant.

The news of the change in the membership of these two houses came as a surprise to New York face-brick men. H. Otto Wittpenn, the junior member of Houghtaling & Wittpenn, is mayor of Jersey City, N. J., and is a candidate for the governorship. This may account for his withdrawal from other business affairs at present. The new co-partnership has been incorporated at Albany, N. Y., for \$60,000 and becomes effective July 1. The directors are William Otis Fredenburg, Herbert D. Lounsbury and Edwin M. Houghtaling.

The Clay Products Agency, 2556 Racine Avenue, Chicago, Ill., wants all sizes of drain tile and silo-blocks and asks manufacturers to submit prices on carload shipments, f. o. b. Chicago and points taking Chicago rates.

BRICK RECOMMENDED BY ARCHITECTS

From Standpoints of Economy and Resistance Brick Surpasses Other Materials.

Brick is recommended by the American Society of Architects as the best material for construction work, according to the new year book issued by the national organization. From the standpoint of both economy and resistance, the architects have found through tests that brick surpasses other materials and predict a general "back to brick" movement.

The following is a section of the report:

"After exhaustive research and thorough investigation, including the severest fire and water tests that could be applied to building construction, we do not hesitate to say that brick work far surpasses any other form of construction work known to science. Either structural steel or concrete measures up to commercial tests, as originally known, but where these materials have been subjected to extreme heat and streams of water have been applied to buildings constructed of these materials, under these conditions the results have been disastrous.

"Building brick in the course of manufacture is subjected to from 2,800 to 4,000 degrees Fahrenheit, hence all the combustible material has been consumed, and consequently no fire that can later be applied can affect it. Because of the economy of transportation and the facilities with which this material can be laid in a building, there is a very noticeable 'back to brick' movement in all forms of construction.

"The crushing strength, likewise, demonstrates the superiority of this material. Hard, well-burned brick will stand from 3,000 to 5,000 lbs. per square inch.

"A further evidence of the indestructibility of brick is the fact that when a building is demolished, common brick can be readily cleaned and economically delivered and relaid without showing any marked deterioration."



The Johnson Gateway, Main Entrance to Harvard University, Cambridge, Mass.

Harvard's Beautiful Brickwork

Splendid Examples of Burned Clay Architecture Represent Skill of America's Foremost Designers

By Livingston Wright



AFTER trying every known building material in search for novel effects, architects and builders have returned to the use of "good old brick" and they find that when they desire to produce something especially artistic or out of the ordinary they invariably rely upon brick—no other material seems to create such a dignified and pleasing effect. This preference is shown, not only by the architect, but by the contractor, the owner and all interested in building lines.

Never was the truth of all this more strikingly evidenced than at the present time to any one who will take a tour of observation among the new buildings, recently constructed in any section of the country. Brick is not only holding its own but, just now, there is such a demand for it, that this venerable building material is more than holding its own and is riding the crest of popularity almost exultingly, as if to huzza: "I told ye I'd be back!"

One of the finest examples of the recent employment of brick as a trimming-effect is shown on the ornate new gate to the campus of Harvard University in Cambridge, Mass.

It has been a long-enduring custom for the various classes to set up gates as monuments to commemorate their dates of graduation and as a proof of their grateful remembrance of their Alma Mater. Certain of these structures are exquisite examples of the designing art, notably the Johnson, or main gate, erected by the Class of '77 and the gate put up by the Class of '57.

These gates are especially noteworthy because of the vast store of architectural and constructive information that backed their designing. Harvard University maintains courses of instruction in Architecture, Design, History and Engineering that put forth some of the most

celebrated professional men in those lines in the world.

When these college classes set out to place a memorial, erect a gate or plan to set up whatever material perpetuation it may be, they have the most expert of technicians to call upon. To satisfy their demands, is infinitely more difficult of achievement than were the object mere novelty. The idea to be embodied is the result of careful thought by every living member of the particular class to be memorialized and the result must be subtle, impressive, and harmonious.

The Boston Elevated, the concern which operates the street car system of Boston, Cambridge and a score of suburbs, recently established a new station near the Harvard Stadium. They built their station approaches and ornamental fence work of concrete as a structural basis, but when it came to devising a finishing touch that should make it harmonize appropriately with other buildings in the classic neighborhood, brick were set into the concrete with a most effective result. Without brick, it would have been well nigh impossible to create the especial structural effect desired.

Another beautiful new building executed in brick, is the Gymnasium of Radcliffe College, the women's annex of Harvard University. It is a structure that presents a remarkable unification of substantiality, elegance and beauty with brick as the principal structural material.

There are many definite reasons, when we come to analysis, why brick is just now in the ascendancy. Chief of them is that brick looks genuine and is genuine! Not long ago, there was a monumental effort to foist imitation-stone concrete blocks upon the building world. By the aid of especially devised machinery concrete blocks were thrust upon the market and broadly advertised as "no two alike" and each alleged to be "so like roughly-cut stone" that the fact of its being concrete could not



Gymnasium of Radcliffe College, the Women's Annex of Harvard University.

be distinguished except by the most careful inspection.

But, with builders of taste and promoters of discretion, this upstart building material was soon placed in the same category as imitation shingles made of tin or zinc and tiles of painted tin. Its outrage upon taste and propriety is driving it off the market to say nothing of its tendency to gather moisture and its many other drawbacks which are well known to builders.

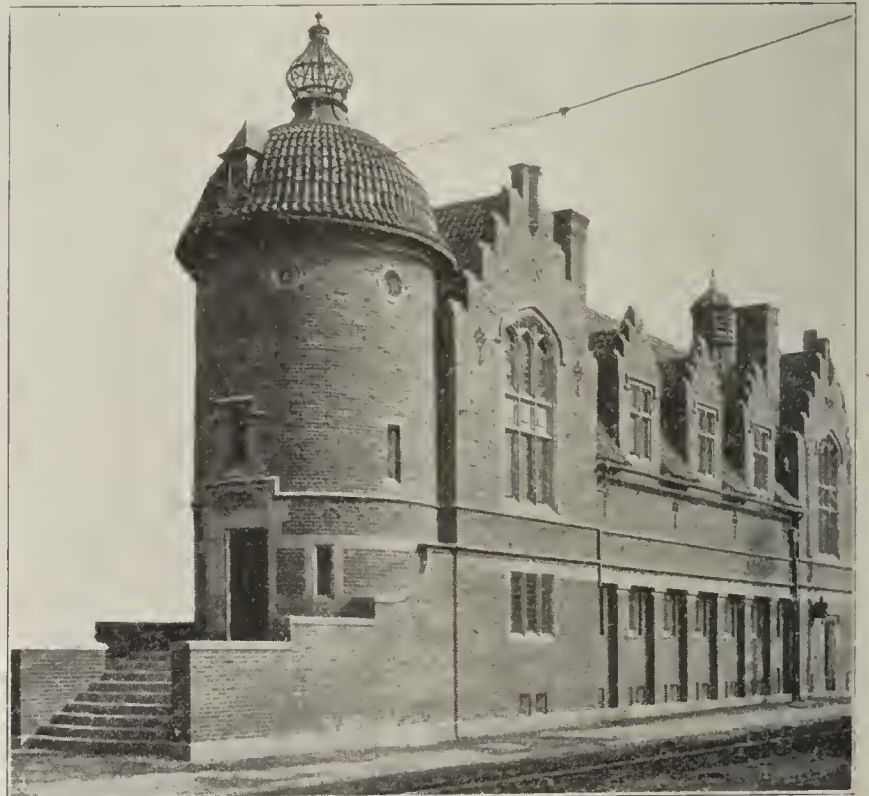
Imitation bricks, imitation stone, imitation mahogany, imitation tiles, shingles, "graining,"—all belong in the same abominable list!

The first principle of good building, like good furniture and good manners, is genuineness.

The writer was talking, recently, with a builder who is putting up a new apartment-house in the midst of a string comprising acres upon acres of new apartments along Boston's noblest avenue, Commonwealth. The apartments are examples of variations of concrete construction, in every imaginable style of cheap, showy and distressing front-wall effects.

This contractor was, however, putting up one three-story brick, with the severe, swell-front so well known fifty to sixty years ago. I asked him why. He said, with a grin:

"I rather thought I would like to have something respectable looking, in the midst of so much cheap-John 'style.' Seems to me if a fellow can't concoct a grand piece of architecture, he can at least build a decent job. So, to express my idea, I have built the body of my house of plain, old-fashioned red brick and built the foundation



Home of the Harvard Lampoon, a Comic Weekly Published by Harvard Students.

of plain concrete blocks, that make no pretense of being molded to represent cut-stone but look like concrete block and nothing else!"

The impressive dignity of this particular apartment-block is apparent to every passer-by and the contractor says he is astonished at the commendatory attention his venture is receiving.



Architectural Building, Recently Completed at Harvard University.

Selling Brick

SALESMANSHIP AND ITS APPLICATION BY THE MANUFACTURER OF BURNED CLAY PRODUCTS



Intelligent Application

Heart Talk No. 4

By Iverson C. Wells



INTELLIGENT application is essential in whatever line of endeavor we may undertake, if we expect to get the fullest measure of success as a reward for our labors.

Misdirected efforts seldom bring us to the goal of our ambition. We may strive from early morning until late night—putting into each minute of the day every ounce of energy we possess, but, unless we strive knowingly and for a purpose, what use is it?

The brick salesman who starts out the day without a pre-arranged program is misdirecting his efforts. Usually he wastes half the morning trying to get

This is a series of heart-to-heart talks on one of the most important and most neglected departments in the successful conduct of a clay product plant. Mr. Wells also will review current advertising by clay plants, as publicity is one of the essentials of good salesmanship. Manufacturers are invited to submit copies of their advertising for critical review.

started, only to find later in the day he started at the wrong end.

Figure out first what is before you. Don't go at things haphazard.

Thirty minutes making plans the first hour may save three hours of time later and give you a consistent working basis.



THE efficient salesman begins his day's work as he leaves his bed. He continues this work on the way to his office and by the time he has reached his desk he has a certain, well defined purpose in mind.

He who makes an intelligent use of his time manages to crowd more actual work into a day than the salesman who trusts to luck and what the day may develop, does in three days.

Sift over your prospects, sort out your tips, study the daily papers and get a line on what SHOULD be done on a certain day and arrange your plans accordingly.



KNOW a manufacturer who has been in business forty years, succeeding his father who established the factory he guides more than seventy years ago. This manufacturer is one of the most energetic men I believe it is my lot to have met.

There is not a lazy bone in his body. He is on the job morning, noon and night.

And yet, with all his tireless labor—with all his years of toil—today, when he is nearing the ebb of the tide, he is still a worker and is running a one-horse business.

His trouble has been—not lack of application, for he has applied himself strenuously to his business, but lack of INTELLIGENT application.

There has been no systematic plan to labor with. There has been no consistent goal to which he directed his efforts.

Work? Yes, but to no purpose.

Had this man mapped out his work and stuck to that work with a single purpose he would have a different tale to tell today.

He is a man of the most estimable character. He

[illegible]

"HE'S A BRICK"

HAVE you ever heard this expression used referring to your best friend, and thought what it stands for? Stability, character, solidity, and all qualities that wear well. Have you thought where this expression originated? From the best of all building materials--BRICK.

Why not build your new residence of brick? You will find it cool in Summer, warm in Winter, never has to be repaired, never rots, never has to be painted, cheap insurance, and in addition to this there is a dignity and beauty about brick that increases from year to year. Also investigate the comparative low cost.

Write for prices and information.

GEORGIA-CAROLINA BRICK CO.
AUGUSTA, GA.

We have received a letter from W. S. Cochrane, secretary of the Midland Brick Co., of Peru, Kas., in which he says: "We are pleased to note your continued campaign for co-operation among clayworkers. There are a score of ways in which co-operation would be beneficial; advertising is but one of them. Transportation of the product is of almost equal importance, and, along this line, let us suggest that were all brickmakers to work together, they should not only be able to gain a reduction in the cost of expressing samples, but when the Parcel Post law is amended, they would, in all probability, secure a higher limit than the present one, which makes it impossible to send more than one brick at a time." There is a great deal of truth in what Mr. Cochrane says, and it will be well for brickmakers to remember their congressman's name long enough to write him, asking that the weight limit of parcels admitted to the Parcel Post be raised to at least fourteen pounds, which would include two brick and the package.



Showing Immense Kiln Shed at the Mehrhof Yard, Hackensack, N. J. Clay Pit in the Foreground Showing Carts Being Loaded With Clay.

In the Jersey Clayfields

Mehrhof's Common Brick Plant an Important Link in Chain of Plants at Hackensack, N. J.



F any person should be of the opinion that the brick business was slowly being killed by the introduction of other building materials, a short trolley trip out from New York City through the upper parts of New Jersey, would soon dispel such an illusion, for there will be found a great chain of clay plants, where immense quantities of clay products are manufactured each year.

As we speak of the great "coal fields" of Pennsylvania, so we may speak of Hackensack and the surrounding country, as the "brick fields." There, as far as the eye can reach, may be seen great brick sheds, smoke pouring from the tall smoke stacks, indicating the activity going on in the various large plants.

Forming one of the links in this chain of brick plants is the plant of Mr. Phillip Mehrhof of Hackensack, N. J. This plant is situated on the Hackensack River, which affords facilities both for shipping much of the output and also for securing the fuel cheaply and easily.

The clay is dug by hand and carted by mule teams to the plant, a short distance away. After passing through the circular disintegrators it is carried to the moulds and shaped into green bricks, which are then placed on the yard in the sun, for drying. After preliminary drying, they are stacked up in long rows with spaces between, for a further drying. The style of kilns used are what are known as the "knock down" variety, built as the occasion demands, according to the number of brick to

be burned at any one time. The up-draft system of burning is used, the kilns having an average capacity of 40,000 brick to each arch, the number of arches running from ten to twenty-four.

The manager, Mr. Charles Chops, says the sales are good and the future outlook looks encouraging. Brick are selling for \$5.50 per 1,000 on the yard. Wood is used for burning, at about \$5.00 per cord on the yard.

The capacity of the plant is about 40,000 brick daily. In the summer, the men begin the day's work early in the morning, at 6 o'clock, and finish in the afternoon, about 3 o'clock, in order to avoid working during the long hot afternoons.

Lath To Be Placed Between Brick.

Spokane, Wash., will make an experiment with a new method of laying brick pavements on grades, in order to meet objections of the Spokane Horse Owners' Association as to the brick pavements heretofore laid. In laying brick on this grade, lath will be laid between each two rows of brick, separating them $\frac{3}{8}$ of an inch. This may make the paving more noisy, but horse owners think it will furnish a better footing for horses. The cement between the brick will not come up to the surface of the street as has been the case in the past. The Horse Owners' Association has volunteered to pay the extra cost, if any, in trying the experiment on one street.

EDITORIAL SECTION

Volume XLII. CHICAGO, JUNE 15, 1913 Number 12

THE VALUE OF A TRADEMARK IN SELLING A PRODUCT.

The successful men in the clay working field—the men who have made a big business from a small start, invariably recognize the value of a trademark and attribute a considerable part of their success to the adoption of a **DISTINCTIVE NAME** by which their product is known.

Look over the list of successful brickmakers, for instance. We find that "Tapestry", "Kittanning", "Textur", "Bradford Red", "Standard", "Greendale", "Hy-Tex" and "Mission" are names that are as familiar to the buying public as "Castoria" to the mothers of crying babies.

Whatever you make, make it so you will not be **ASHAMED** to stick your **NAME** or your **TRADE MARK** on it.

There is **MORE THAN ONE REASON** for this.

The public mind has much to **REMEMBER** and that which is **EASIEST** to recall is bound to be **UPPER-MOST** in its thought when the time comes to **BUY**.

Take for example, the manufacturers of a common soda cracker.

A few years ago it was customary to sell crackers in bulk. No name or identifying **MARK** appeared anywhere but on the barrel or box and that, as a rule, was **HIDDEN** under the counter.

One day there came a manufacturer who conceived the **IDEA** of placing his cracker in a small, water-tight carton. This was, primarily, to keep the contents in good condition, free from moisture and dirt.

The principal idea, however, was to afford a means of stamping the name **ON THE CARTON** that would be **CARRIED INTO THE HOME** and saved until the contents were eaten.

Mothers were encouraged to **KEEP** the cartons and use them as luncheon kits for the children to carry to school.

He stamped the **NAME** on each individual cracker.

He **ADVERTISED** the name in newspapers, in magazines, he painted it on fences and posted it in the street cars.

Today so common is the name **UNEEDA BISCUIT** that it is doubtful if the average housewife ever asks for any other cracker, because in her mind, "Uneeda Biscuit" and "soda cracker" are **SYNONYMOUS**.

Publicity carries but one **PENALTY**. It is the necessity of making the goods advertised of standard **EXCELLENCE**. Publicity creates a **FAMILIARITY** that breeds friendliness and **TRUST**. Betray that trust by **LOWERING** the standard and the punishment of **DISFAVOR** follows with lightning swiftness.

Set a **STANDARD**, maintain it in every department, select an **EASILY REMEMBERED** name and arrange to stamp or print it on every brick or block or pipe or **CUP AND SAUCER** that leaves your plant. Make your salesman **TALK** it and **BELIEVE** in the excellence it **REPRESENTS**.

Before the days of advertising, a man had to be in business **MANY YEARS** before he secured a **GOOD REPUTATION**. Today he has but to make a **GOOD PRODUCT** and give the fact **PUBLICITY**. The public reads with a certain amount of faith—it **HOPES THE GOODS ARE AS GOOD AS THE ADVERTISER CLAIMS**. They are willing to **INVEST ONCE**. After that it is his privilege to live up to his own ideals.

Considering the reward, it is an **INEXPENSIVE** way of building up a good reputation. And a **GOOD REPUTATION** is, in itself, **PUBLICITY**.

PUBLICITY AS A MEANS OF CREATING DEMAND.

Quite often within the past year, this journal has pointed out the necessity of the clayworker making known the merits of his product, if he would hope to combat his natural foes—the cement manufacturer and the lumber merchant.

We have said further that the **POSITION** these two foes occupy in the building world was due to

their **AGGRESSIVE METHODS** of salesmanship and the **LACK** of interest the clayworkers have shown in the work of **LETTING THE PEOPLE KNOW** how good burned clay **REALLY IS**.

It is with a feeling of considerable pride and satisfaction, then, that we note the apparent **NATIONAL AWAKENING** of the clayworker to the importance of this movement, because we feel we have done our share toward bringing it about.

It is no uncommon thing to pick up a newspaper

or magazine and find some enterprising brick or tile man hammering away at the buying public. The **PUBLICITY WAVE** is not confined to any particular locality or field. The small manufacturer and the large manufacturer alike are going into the spirit of the work with an energy that is surprising.

Within the last six months no less than three brick manufacturers have set aside appropriations of gigantic proportions—one as much as \$100,000—to be used in **PUBLICITY WORK** and to create a demand for their products while **EDUCATING** the public to the use of **BURNED CLAY**.

These campaigns are **NATION-WIDE** in their scope and will not only bring added sales to these three concerns, but indirectly benefit the clay industry as a whole.

Then, too, there are hundreds of clayworkers who are entering the field of practical salesmanship through the consistent use of printers' ink, but who are confining their work to the local territory in which their plants are situated.

This publicity movement is not in any one state or section of the country. Local newspapers in Georgia towns, in the small cities of Ohio, of Iowa, of Colorado, of Texas—in fact, in practically every state of the Union—are carrying **ADVERTISEMENTS** of the local **BRICKMAKER**.

One brickmaker out in Iowa, a recent graduate of "Brick and Clay Record" has met with such success in his publicity work that he has unselfishly offered to **SHARE HIS PLANS AND IDEAS** with others.

It is gratifying to note all this **ACTIVITY** and we hope the fever **WILL SPREAD** until every clayworker in the country is telling his buying public what a **WONDERFUL MATERIAL** burned clay is.

We feel, however, that a word of **CAUTION** is necessary.

Publicity is essential to salesmanship, but it should be bought with the same **CARE** and **CONSIDERATION** as fuel, labor or machinery.

Money can be **WASTED** in advertising and instead of reaping **PROFITS**, the only gain is a doubt in the efficacy of publicity—the tool is blamed for the **AWKWARDNESS** of the hand that guided it.

A novice in advertising has an idea that all that is necessary is to **DASH OFF** a few lines, stick them in a newspaper, pay the bill and **WAIT** for the harvest.

Advertising means much **MORE** than this.

Your advertising copy must be carefully **PLANNED**, the space determined from a point of **ECONOMY**—its location and general treatment **CONSIDERED**.

Haphazard publicity is no more apt to bring profits than haphazard manufacture or careless and

UNSTUDIED methods in any other branch of your business.

There is nothing that will aid your selling force like **PROPER** publicity, because it is necessary to let people know you have something they want **BEFORE** you can expect to sell it to them. The more people who **KNOW YOU AND YOUR GOODS**, the more prospective customers are waiting for you. And the most inexpensive method of reaching the vast multitude of buyers is through the **JUDICIOUS** use of printers' ink.

WHAT YOU WILL YOU CAN DO.

A reader takes us to task for a statement we made in these columns in the May 1 issue. He criticizes what was said

and discusses the subject briefly but frankly. Here is what we said:

Whatever you **WILL** to do you **CAN** do. Man has conquered the seas, the land and the air just because he **WILLED** it. Determination to quit has cured **MORE** drunkards than all the gold cures. Clayworkers may put into use this same common sense law in their own business. Make up your **MIND** to have imperishable burned clay the world's material and it will be done.

This is our correspondent's candid criticism:

"It is well enough to say that one can do whatever he **WILLS** but putting the preaching into actual **PRACTICE** is another question.

"It may be possible to do the **POSSIBLE**, but not possible to do the **IMPOSSIBLE**.

"For instance: How **CAN** I make twice the output I am now making at the same cost price? I **WANT** to do this, and, according to your philosophy, I **CAN**. I might add that I am in a most receptive mood."

There is no sorcery about **MASTERING WILL POWER**. There is no hocus-pocus—no mystic waving of the magic wand.

He who says that something is **IMPOSSIBLE** admits a weakness that is sure to make **POSSIBLE** things impossible.

When Edison declared he would turn the darkness of night into sunlight the world **SMILED** at him.

"You may be a **WIZARD**," they told him, "but even wizards cannot do the **IMPOSSIBLE**."

And yet Edison fulfilled his promise and the persons who scoffed at him twenty-five years ago were not only men who did not know better, but men **WHO SHOULD HAVE KNOWN** better.

When Howe told a friend he was going to make a machine that would do the same **WORK** a woman's hands and her needle were doing, **BETTER** and **FASTER** than she could do it, that friend **THOUGHT** and **SAID** he was **CRAZY**.

When Howe completed his first crude sewing machine, there were, even then, those who said it was **IMPOSSIBLE** for an inanimate object to accomplish what a woman's fingers, guided by her **BRAIN**, could do.

It is so the world over. Just because we do not stop to look far enough ahead—to use the brain **GOD**

gave us—we say things **CANNOT** be done and let it go at that.

Our correspondent may be making his brick at the lowest **POSSIBLE** cost—according to the methods and processes known to him and to his fellow-men **TODAY**.

If he and all other brickmakers of the day should say "We have reached the acme of manufacturing efficiency" and rest **CONTENTED**, then he is right and **NOTHING** will be done to double his output without increasing his costs.

But brickmakers are, fortunately, far from being contented. Improvements are being made, new methods given trials and **COSTS BEING CUT** while outputs are **INCREASED** and better brick being made than **EVER BEFORE**.

If the brickmaker **WANTS** to make a better product and a **LARGER** output, and do it at a **LOWER** cost than he now has on an inferior article, he **CAN** do it. It means that he must concentrate his thought on accomplishing these ends and that there must be no **CESSATION** in his effort.

We may not accomplish what we are seeking **DIRECTLY**—our own hands may not fashion the labor-saving device that is to be employed—but **OUR EFFORTS** may give **IMPETUS** and **ENCOURAGEMENT** to someone else and that someone may, by his efforts, inspire some other to work out the problem.

Thus, through us, the end may be attained and we will have accomplished the result **INDIRECTLY** but **SURELY**.

Half a century ago the French Republic took up the task of building the Panama Canal, after **OTHERS** had failed. They worked until they felt the task **TOO GREAT** and then gave it up.

But what they **DID** furnished the inspiration for American engineers and men of affairs and **TODAY** we see **THE MODERN WONDER OF THE WORLD** nearing completion.

The trouble with our correspondent and with **MOST OF US** is that we **WAIT FOR A MIRACLE** when we want something **DIFFICULT** done.

Nothing is gained by **WAITING**. Inaction is brain rust. Desire begets **INVESTIGATION**. Investigation opens the door to **KNOWLEDGE**. Knowledge put into action is **EFFICIENCY**. Well directed efficiency is the high-road to **ACCOMPLISHMENT**.

When our correspondent wrote as he did, he probably intended his letter to be taken in a jocular spirit.

His proposition, which he says is **IMPOSSIBLE**, is, however, a most feasible one. Some day it will be worked out. It might just as well be by him as by someone else.

But whoever **DOES** accomplish what our friend says is **IMPOSSIBLE**, will have done so because he had **CONFIDENCE** in himself and **TRIED** to justify that confidence.

One cannot **WILL** that a thing be done and **DO IT**, unless he **TRIES**.

There is every reason to believe that a lower tariff and an income tax will be enacted. Fortunately for clayworkers the tariff affects a comparative few

—the potters particularly, but those it **DOES** hit, it hits **HARD**. When the added burden of the income tax comes to those affected, it reminds one of the man who lost his bank-roll and jewelry in a poker game and started home with the prospect of a curtain lecture from his better half. Meeting a foot-pad he was forced to disclose his poverty to an **UNSYMPATHETIC** personality and had the cold comfort of realizing that the highwayman received **VERY LITTLE** for his trouble. Being of a **PHILOSOPHIC** frame of mind, also, it occurred to him that it was not altogether necessary to explain exactly how he lost his watch and money. If the tariff proves as disastrous as its opponents have claimed, there will not be **MUCH** to hand over to the tax collector when he comes around for a **SHARE** in your prosperity.

Great industries are made possible by striving to make and sell the **GREATEST** possible output on the **SMALLEST** possible margin. It is better to sell ten carloads of drain tile at a **SMALL** profit than to sell **NONE** at all at a **BIG** profit.

Some one once said, "It is the constant drop of water that wears away the rock." He who expects success at **ANYTHING** must necessarily apply this same principle. If you want to make the people of your community **USE** clay products keep **CONSTANTLY** hammering into them the fact that clay products **SHOULD** be used.

ALL life is ruled by one sure principle—progression or retrogression. There is no medium ground. Your business is controlled by the same rule. It **CANNOT STAND STILL**. It must either **PROGRESS** or **SLIP BACKWARDS**. What is **YOUR'S** doing?

If you hold to the tail of the eagle on a silver dollar until you see the beaks of the eagles on **TWO** dollars coming toward you, you will never get anywhere in this day when men **MUST** take a chance to win.

He who places his mind in a receptive mood **ABSORBS** information and ideas, if he chooses wisely. He who steels his mind **AGAINST** the ideas of others **NEITHER LEARNS OR PROGRESSES**.

Even the man that **TRIES** makes mistakes sometimes, but his achievements outnumber his failures because he **HAS** tried. It is the fellow that **NEVER** tries that makes the **MOST** mistakes.

New Methods and Processes

A DEPARTMENT OF TECHNOLOGY
WHEREIN RECENT EXPERIMENTS
AND DISCOVERIES ARE EXPLOITED

Edited by

Charles S. Kinneson

Ceramic Chemist, United States Bureau of Standards, Department of Geology

Contributing Editors : Prof. Charles F. Binns, Ellis Lovejoy, C. E., Anton Vogt

The Nature of Refractory Clays*

The principal ingredient of fire-clay is a hydrous silicate of alumina, for the formula $\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O}$, corresponding to the following percentage composition.

	Hydrous	Dehydrated
Silica	46.3	53.8
Alumina	39.8	46.2
Combined water	13.9	

While this substance, commonly called kaolin, does not correspond to the most refractory mineral combination of silica and alumina found in nature, it is at least the most commonly distributed material, since it may be assumed to be the fundamental constituent of all fire clays.

The so-called melting point of pure clay is close to that of platinum, i. e., about 1755° (3191°F). Clays whose

COMPOSITION CHEMICAL

softening temperatures differ too greatly from that of kaolin should not be classified as fire clays, though the chemical composition of fire clays approaches more or less closely that of kaolinite $\text{Al}_2\text{O}_3 \cdot 2\text{SiO}_2 \cdot 2\text{H}_2\text{O}$, they differ very widely as regards their physical structure.

From the technical standpoint, roughly three classes of high grade refractory clays may be distinguished, viz. kaolin clays, flint clay and plastic clays.

KAOLINS

This class of material consists in the purified state of white clayey matter. The plasticity as a rule is but feebly developed, but there are, however, kaolins which possess a high degree of plasticity as the Georgia kaolins and some of the English china clays. These, as long as they maintain good whiteness, are highly valued in the manufacture of white ware and porcelain.

Owing to their purity (absences of fluxes) the kaolins are the most refractory clays. Thus, a well known kaolin from Zettlitz, Bohemia which is considered a standard material of its kind shows a softening temperature, correspondingly to Seger cone 35, estimated to correspond to a temperature of 3191°F .

FLINT CLAYS

The so-called flint clays embrace many materials of a grade of purity corresponding closely to the best grade of kaolin. But like the latter, they may deteriorate into clays of relatively low refractory value. As has been said, they resemble the kaolins very closely in composition, but physically they are very unlike the soft chalky kaolins, in possessing a hard dense structure, showing a well defined shell-like fracture. The color is usually gray. The initial plasticity

is exceedingly feeble, although if exposed to weather or if ground either dry or wet, sufficient plasticity may be developed for molding purposes. Owing to their slight plasticity, their drying shrinkage when ground and made up with water is very slight. On the other hand, in burning, these clays undergo considerable shrinkage.

The volume shrinkage characteristic of these clays subjects the structure of the body, into which they enter, to a severe strain which, owing to the low tensile strength, may cause serious difficulty due to cracking and checking so that it may either be necessary to calcine the flint clay or replace it in part by ground waste brick (grog).

HIGH GRADE PLASTIC CLAYS

Clays combining good plasticity with refractoriness are not of common occurrence. While there are some deposits of this type, the majority of the deposits usually show plasticity at the expense of heat-resisting power and in addition show variation in quality which renders their use in the industries more or less uncertain.

Owing to the higher content of impurities, the plastic clays, necessarily show distinct evidence of vitrification at a considerably lower temperature than the pure fire clays. Pure clays, up to temperatures approaching the softening point, should show no marked tendency to become dense, i. e., the porosity should remain high.

The lower the temperature at which the porosity becomes practically nil, the more inferior is its refractory quality.

**Bulletin No. 7—Bleining and Brown.*

The Behavior of Granular Limestone in Burned Clay

Some interesting investigations have been made by Professor Charles F. Binns and Mr. Merle A. Coates (*Transactions American Ceramic Society*, Vol. XIV, p. 218-220) on the behavior of granular limestone in burned clay, with results that are both valuable and replete with suggestion.

Clayworkers are well aware of the serious troubles caused by limestone occurring in small pieces in their clay. The limestone, due to the heat of the kiln, is changed into calcium oxide or quick lime. Upon exposure to weather the lime exerts its affinity for water and carbon dioxide, and obtaining these from the air, it swells and ruptures the clay body. Clay containing an appreciable amount of lime can rarely be burned to vitrification, because of the sudden fusion which is apt to ensue.

The object of the investigation carried out by Professor Binns was to determine (a) the amount of lime which could be present without doing any harm; (b) the size of grain at which the limestone became harmless; (c) the

possibility of treating the ware after burning, so as to render the lime harmless.

From the results obtained, it appeared that, that lime grains as large as would be rejected by a 12-mesh sieve are objectionable even in small quantities, for although the brick may not be ruptured, there is apt to be an unsightly spalling on the surface.

It also appeared that lime grains which pass 20 mesh are admissible up to 3 per cent of the weight of clay, but here also there is a likelihood of surface damage.

It was further found that, to be entirely safe, the lime grains must be ground to pass a 36-mesh sieve and that lime as fine as this may be present in a proportion as high as 12 per cent, and that the danger of rupture from their presence can be almost completely eliminated by a saturation of the brick with water on being drawn from the kiln. This saturation appears to be more effective if the brick are in a very porous condition.

NEW ELECTRIC TACHOMETER.

The Brown Instrument Co. and the Keystone Electrical Instrument Co., of Philadelphia, Pa., are placing on the market a new electric tachometer or speed indicator to accurately indicate, or record on a chart, the revolutions per minute of a rotating shaft or wheel.

There are many operations where an accurate speed indicator is desired to be permanently connected to an engine or machine, and to show at a glance the speed at which it is running, or to keep a constant record of this speed on a chart for the entire 24 hours.

The electric tachometer has the advantage of not only



Standard Brown Electric Tachometer.

being exceedingly accurate, but the indicating or recording instrument can be located at any desired distance from the shaft, the speed of which is to be measured. The instrument consists of a small magneto or generator, particularly designed for use with the tachometer and which generates 25 volts at 1,000 R. P. M. On account of the voltage generated, an instrument, absolutely dead beat in operation can be supplied. Instruments have been particularly designed by the above companies of unusually high resistance, exceeding 3,000 ohms in each instrument, so that the length of leads connecting the magneto or generator and the indicating instrument have no effect on the readings, and also one, two or three

instruments can be connected to the same generator without affecting the indications. This high resistance feature is exceedingly advantageous.

With many machines it is desirable to operate them at a certain speed to produce the best results, as, for instance, in large machine tools it is desirable to know the cutting speed, and by use of this electric tachometer mounted beside the machine the exact speed can be noted at all times, and maintained as desired.

This new electric tachometer which has some radically improved features over anything on the market heretofore, will doubtless prove most interesting to any one who desires to secure an indication of the speed or a constant record on a chart, and the above companies will be glad to send a new bulletin describing the Brown electric tachometer to any one who is interested.

FIREPROOFING FLUID MADE OF CLAY.

Combination of Clay and Chemical Forms Solution Unaffected by Flames.

Dr. Kimball, of Chicago and Camden, Ark., has applied for a patent on a fireproofing fluid which he distills from the white clay which abounds in Ouachita country, Ark. By a combination of certain chemicals, he succeeds in dissolving a portion of the clay. The fluid is colorless as water, and almost without taste. It is said to be absolutely harmless to the most delicate fabrics, and can be applied to the skin without pain or injury.

The fluid is applied to cloth by means of a dipping vat. Lace curtains, long strips of light cloth, or cotton, after being dipped in the fluid and allowed to become perfectly dry, will not ignite when fire is applied to them. As an experiment, a pile of shavings was sprayed with the fluid and then allowed to become as dry and brittle as when they were made; when a fire was built under the shavings, it burned itself out without setting fire to them.

The melting points of various heat-resisting materials have been thus determined: Fire clay brick, 2,831 to 3,137 degrees Fahrenheit; bauxite brick, 2,841 to 3,245 degrees; chromite brick, 3,722 degrees; magnesia brick, 3,929 degrees; bauxite, 3,308 degrees; chromite, 3,956 degrees; pure alumina, 3,650 degrees; pure silica, 3,182 degrees; silicon carbide, beginning to decompose at 4,028 degrees, does not melt below 4,892 degrees.

A French method of giving glass, pottery and other siliceous surfaces a metal coating consists in treating the well-cleaned surface with a solution of silver fluoride, exposing to a current of illuminating gas, heating to 50 degrees C., and while at that temperature exposing to a current of carbon sulphide. The result is a deposit of finely-divided silver on the non-conducting surface. This may be burnished for better appearance if desired, or the article may be placed in an electrolytic bath to obtain a coating of other metal.

Imported Seger Cones.

We are advised that imported Seger cones are sold in America by Eimer & Amend, of 205 Third Avenue, New York. This concern does not have an exclusive sale but will, no doubt, be willing to carry a complete stock if it is assured of a demand. Our German correspondent informs us that it would take about three weeks to secure the cones from the factory and quotes us prices in hundred lots, which we will gladly give "Brick & Clay Record" readers in case they are interested. This information comes to us as a result of an inquiry recently made through our "Questions and Answers" department.

The Superintendent

A DEPARTMENT CONDUCTED FOR THE INTERCHANGE OF IDEAS IN METHODS OF MANUFACTURE

Contributions from our readers are solicited for this department on any subject pertaining to the manufacturing end of the industry. Short cuts and labor-saving suggestions are particularly sought. Address all communications to the Editor of the Superintendent Department. Brick and Clay Record, Chicago.

That electricity is making rapid strides in the clayworking industry in Louisville and Kentucky is evidenced by recent developments in the Blue Grass state. For some time brick and tile factories seemed to present almost insurmountable difficulties to central-station men for the advantageous adaptation of electric current to brickmaking, but subsequent developments have proved otherwise.

The Coral Ridge Clay Products Company, of Louisville, which was recently incorporated with a capitalization of \$100,000 to engage in the manufacture of brick, tile and other clay specialties, is to establish an immense plant at South Park, a few miles south of Louisville, Ky., which will be ready for operation this summer. The plan is to burn clay products by a special process of electrically-fired kilns which is believed to typify the most advanced method of handling this operation in the industry.

The utility of electricity in another phase of clayworking has been demonstrated by the Louisville Brick Company, at 38th street and Rudd avenue, Louisville. This company has wired its plant complete with arc and incandescent lamps and has contracted with the Louisville Lighting Co. for current which will enable it to run full time during the dark months of January, February and March, as well as permitting overtime work when the days are longer. The illuminating improvement is considered by President Joseph Nevin to be one of the most valuable ever made by the brick company, for under ordinary circumstances the yard has lain idle three months of the year.

BURNING OF FIRE BRICK.

Foreign Engineer Contends That Harder Burned Brick Would Command Higher Prices.

BY E. SCHMATOLLA.

Fire brick, which have to stand very high temperatures and chemical action, are mostly burned at a much lower temperature than they will be compelled to stand later in the furnaces or kilns; the consequence is that fire brick, made from first-class raw refractory material are found very often to be too soft; that they shrink later, when they are exposed to high temperatures, particularly in gas furnaces and gas kilns; that the pores of the soft brick and the cracks, which are the result of the shrinkage, allow melting or fluxing masses of material which become softened in the fire (for example, lime, cement, etc.) to penetrate into the lining and to destroy it very quickly, even if the fire brick have been made from the highest class of material, which has shown a very good analysis.

Some fire brick manufacturers, who are asked for a very hard-burned and high aluminous fire brick, mix their own or imported high-class materials with clay, which fluxes at a comparatively low temperature, and obtain, of course, a harder burned fire brick, but the binding ma-

terial does not resist high temperatures, and the fire brick manufactured in this manner becomes soft in the lining of furnaces or kilns, and do not withstand high temperatures, better, than the afore-mentioned soft fire brick.

On my first visit to America, three years ago, I was astonished that the prices of so-called first-class fire brick were much lower here than they were, for instance, in Germany. I understood that the low prices did not encourage manufacturers to manufacture special brands for special purposes and to build modern gas kilns for burning special qualities.

I strongly believe that if a fire brick manufacturer would prove that a certain brand of his goods would stand twice or three times as long as another fire brick, for which his customer only paid half as much, the latter would gladly pay him twice the amount, as he is saving many times more on expenses for repairs and, by getting a higher efficiency from his plant, having less furnaces or kilns (and capital) idle by the necessity of repairs.

In most of the furnaces and kilns, only a small part of the fire brick, which are required for lining purposes, must be of especially high fireproof, chemically and physically, resisting material, and the building costs are not much increased by the higher price of a small portion of the fire brick material. But the fire brick manufacturer, who is able to supply the special material will, in most cases, secure the order for ordinary fire brick.

Worth a Year's Subscription.

One of our Ohio readers, W. M. Mitchell, of Fredericksburg, expresses his appreciation of services rendered, as follows:

"'Brick and Clay Record' is giving, in my case, excellent satisfaction and I am well pleased with it. There are some numbers in the year that are not of much value to me, but then there will probably be a single number that will be worth the price of a year's subscription, as in the case Dec. 15th. I refer to the article 'How to Overcome Lamination.' I also thank you for your answer to Question No. 32. I am well pleased with this answer, especially in regard to the dryers."

How to Keep Tools from Rusting.

Slowly meet together 6 or 8 parts of pure hog's lard and one part of resin and stir until cool. This remains in a semi-fluid condition and always is ready for use. The resin tends to prevent rancidity and supplies an air-tight film. A little rubbed on a bright surface will effectually protect and preserve the polish.

Why not have a daily bulletin board in your plant placed where every employe has to pass it? Post on it general orders, little hints and suggestions daily. The stenographer will prepare them for you at your dictation.

Questions and Answers

A DEPARTMENT FOR THE SOLUTION OF THE KNOTTY PROBLEMS CON- FRONTING THE CLAY WORKER

This department was inaugurated to be of material benefit to the readers of "Brick and Clay Record" and no charge is made for the service given. The advice of the world's recognized authorities in ceramics is offered to clayworkers who are invited to avail themselves of the opportunity to have their problems solved here. Should a reply be desired by letter enclose a stamped and addressed envelope for reply.

Assorted Information Wanted.

102. *Illinois—I wish to ask a few questions: (a) What are the floor plans of the Forest Hills single house? (b) Are they in print? (c) Where and when will the plans of the \$2,000 "1913 Clay Show" house be published? (d) What mortar was used in these? If lime was used, how much more approximately, would cement mortar cost? (e) Do the "Natco" fireproof tile cost more or less than brick? (f) Are they made in variety enough to use in place of brick throughout a house?*

(a) You will find two different floor plans of the Forest Hills single houses in this issue. (b) This is, so far as we know, the first time they have been printed in any magazine or periodical. (c) In "Brick & Clay Record" July 1st issue. (d) The mortar used in the Forest Hills houses was practically a lime mortar, with very little cement—probably not more than one bag of cement to one barrel of unslaked lime. The difference in cost between lime mortar and cement mortar is shown in an article in our "Face Brick" department, this issue. From the figures, you will see that it is impossible to say what the difference in cost is, unless we know what proportion of cement you mean, when you speak of "cement mortar." (e) We are not prepared to answer your question as to the comparative cost of "Natco" tile and brick. If you mean the comparative cost of a house built of Natco tile and finished in stucco, as compared, for instance, to a brick construction, solid 8 in. walls,—we understand that the Forest Hills houses that were built of hollow tile and stucco cost \$200.00 a house less than did the brick houses. (f) We would suggest your writing to the National Fireproofing Co. for catalogues and determining for yourself as to the variety of the shapes and sizes they make.

Brick Facing vs. Concrete Block.

133. *Alabama—Two or three of our contractors here have begun to use concrete blocks and if we tell them that brick is better building material, they say at once, "Yes, you would recommend brick, of course." And we reply, "Of course, we would, for brick is better than concrete, any day." Our object in writing you is to inquire where we can secure some convincing literature on brick as compared to concrete block, as we need it to distribute in this neighborhood.*

We do not know of any book that specializes on the merits of brick as compared to concrete-block—the concrete-blocks themselves being as strong an argument for brick as any that could be written. The makers of concrete-block machines have advertised them extensively and, since the machines are not elaborate, have been able to sell them at a very low price. This has brought a host of irresponsible concrete-block makers into the market and, where there are two or more competing for a small local trade, they generally "skin" their product to get the profit. Concrete-blocks are not cheap if

well made. They need a good grade of cement, a sand that is clean, sharp and free from salt and, more than anything else, a large covered space in which to weather the finished product. "Drying" is not sufficient—the blocks should be exposed to the air (but not to sun or rain) for from four to six months. Very few concrete-block men have the space, the capital or the desire to make a good article. They are after the money they were promised by the men who sold them the concrete-block machines, and the results show in the buildings in which their material is used. It shows efflorescence or white-wash, it disintegrates and it absorbs, for some time after it has been placed in the wall, germ-laden dust that may, and generally does, develop into a green or black growth.

When concrete-blocks are well made and well weathered, they make good building material for certain work—someone has said that they would make excellent facing for a jail, being uninviting in appearance. They certainly have an unpleasantly cold and dirty color, they tell, openly, that they are an imitation of stone, and, through their uniformity of outline—the roughness of each block being of exactly the same pattern as that on the other blocks—they are tiresome to the eye. When compared to brick, with its multiplicity of shadings, its soft and diversified outlines given by well laid joints, and its imperviousness—the quality that defies atmospheric changes and the wear and tear of time, concrete-blocks are not within sensible consideration. They are, in a way, a joke—a particularly inartistic one—and the joke is "on" the man who uses them to face his building, home or cellar-wall. Some day he will awaken to the fact that he has a mighty poor imitation of stone that was not cheap, but that looks cheap, and that he might better have used something real on the outside of his house—real stone or real brick—and had it, at any rate, honest.

Wants to Know About Express Rates.

141. *Illinois.—We have noted the article on special express rates in your May 1 issue, but as you do not give classifications in which this rate is made, we are at a loss to know whether we are using this rate or not. The rate at which we are now shipping our samples is the "merchandise rate," with a minimum charge of 35c—that is, shipping 50 lbs. of brick samples to a point to which the rate is \$1.00 per hundred, at the pound rate the charge is 50c, while under the graduated rate usually charged, the amount paid would be 70c.*

We are advised by one of the large express companies that the following regulations are in force in Illinois: "Merchandise pound rate prevails, with a minimum charge of 35c—for example, the rate from Chicago, Ill., to St. Paul, Minn., is \$2.00 per 100 lbs. Multiply the weight by the rate—in this case 2c per lb., and a package weighing 12 lbs. would cost 35c—the minimum charge—while one weighing 20 lbs. would only cost 40c. Chicago, Ill., to Springfield, Ill., with a rate

of \$1.00 per 100 lbs., a package weighing 12 lbs. would cost 35c—one weighing 20 lbs. would also cost 35c—while one weighing 40 lbs. would only cost 40c." These rates became effective June 1, 1911, by authority of decision of the Interstate Commerce Commission, No. 3495.

Who Wants a Good Burner?

145. *Iowa.*—*I am a brick and tile burner and have made a success, but I am compelled to find a different climate on account of my health. I want a place in the south or west and wish you would give me the names of some of the leading clay plants in Nebraska, Colorado, New Mexico, Oklahoma or Texas that are using down draft kilns. My present employers back me up in my claims that I am a good burner, and I am sure that if any of your correspondents want a good man, I can convince them of my ability to produce results.*

We are glad to publish the above letter and will thank our readers to pass the word along to anyone they know in the territory mentioned by this correspondent, who might be in need of a reliable man to act as head burner. If you have no opening at your own plant and know of anyone who has, either write him or write "Brick and Clay Record" and we will try to bring the man who wants the man and the man who wants the job, together.

Who Makes Chimney Pots?

134. *Manitoba.*—*We are anxious to get in touch with a manufacturer of chimney caps, particularly one in either Pennsylvania or Ohio, as we are taking brick from various points in those states and would want to include the chimney caps with the brick.*

Will "Brick and Clay Record" readers who make this ware communicate with this office, sending, if possible, diagrams or pictures of the various shapes made?

Silica Brick Plants in Middle West.

129. *Illinois.*—*Can you tell me if there are any silica brick factories in or near Chicago or in fact anywhere in the state?*

Presuming that our correspondent refers to "sand-lime" brick, we are glad to furnish the list, as received from Mr. Plummer, secretary of the Sand-Lime Brick Association. There are no plants in Illinois, but the following will, we are sure, be easy of access: Michigan—Jackson & Church Co., Saginaw; Flint Sandstone Brick Co., Flint; Holland Pressed Brick Co., Holland; Grande Brick Co., Grand Rapids; Jackson Pressed Brick Co., Jackson; Menominee Pressed Brick Co., Menominee; Pressed Brick Co., Detroit; Saginaw Sandstone Brick Co., Saginaw; Sebewaing Sandstone Brick Co., Sebewaing; Rochester Sandstone Brick Co., Detroit and South Michigan Brick Co., Kalamazoo. Indiana—Composite Brick Co., Indianapolis; Gary Granite Brick & Stone Co., Highlands; and Ohlemacher Brick Co., Michigan City. Wisconsin—Silica Product Co., Portage; Columbia Silica Co., Portage; The Composite Brick Co., Milwaukee; The Wisconsin Brick Co., Madison; Silicate Brick Co., Portage; and Acme Brick & Sand Co., Milwaukee.

Has Deposit of White Shale.

127. *New York.*—*We have a deposit of shale that is white as chalk, and which can be easily reduced to sand. We have been informed that it will not make fire-brick but that it will make a high-grade building-brick. Can you refer us to some expert on shale who will make a test of this material and not mislead us as to what it will produce? We want to know positively if it will make a good brick or floor- or roofing-tile. Our disposition of the property will depend on the opinion of this man, hence the opinion must be reliable. Do you know of any experienced middle aged man with some capital who would like to engage in the brick industry?*

We would advise our correspondent to write to the Ohio State University, at Columbus, Ohio, to the department of clayworking and ceramics at Rutgers College, New Brunswick, N. J., or of the University of Illinois, at Urbana, Ill. The amount of material required for the tests and the cost of making them will depend largely

upon how exhaustive the tests will be. The results will be of some aid in determining whether or not this clay is suitable for the purposes proposed but it must be remembered that many things beside a clay that is theoretically good for a certain purpose, are needed to make a successful commercial enterprise. The hills are full of good clay—only once in a green moon is a clay found that is exceptionally good—and then it must be where fuel is cheap, labor conditions good and large markets within easy reach. More fortunes have been sunk in the brick business than have been taken out of it and in nearly every instance this was due to bad location, induced by a discovery of some seemingly wonderful clay deposit.

Burning Low Grade Coal.

135. *Arkansas.*—*We have been in the drain tile and brick business for some years, wore out one set of machinery and exhausted our clay, so are going to move our plant to a point where an excellent bed of shale is available. The fuel, however, will be low grade, and we would like to know the best ways of using it, in both up draft and down draft kilns, also in our boilers.*

Can any of our readers give the information wanted?

Soft or Stiff-Mud Process.

130. *Wisconsin.*—*I am thinking of starting a brickyard and want information as to the proper way to have clay tested and where to have it tested, to find out whether a soft or hard mud machine is better adapted to the clay.*

The New Jersey State College at New Brunswick, N. J., the Ohio State University at Columbus, Ohio, and the University of Illinois, at Urbana, Ill., all have facilities for work of this kind. The fee is very small.

Cheap Counter for Brick Machines.

Irving A. Ryttenberg, president of the Sumter (S. C.) Brick Works, writes, answering Question No. 117, published in May 15 issue:

"In reply to your paragraph in last month's issue regarding counting machine for counting brick; I beg to say that at one time I used a counting machine made by the people who make the Veeder cyclometer for bicycles. This machine I attached to the cutter and every full revolution of the cutter would register on the counter. This multiplied by the number of wires on the cutter gave an accurate account of the number of brick made by the machine. The cost was comparatively small—about \$1.00 or \$1.25. It was destroyed by fire and we never bothered to put on another."

"Scoria" Bricks Made in England.

We are indebted to E. F. Dartnell, of Montreal, Que., for information given us in answer to a question published May 1 relative to "Scoria" bricks. He writes:

"These are made only in the Cleveland district in England and from slag from the Cleveland iron ores. Slag from blast furnaces using other ores will not make satisfactory brick or block. Experiments have been made with other slags in England, Germany and the United States, but in every case have, I understand, been failures. The making of them in England is practically a monopoly. There are, I think, three companies making them, but they have a hard and fast combine. They are considered in England, and here, as the best paving brick or block made."

Wants Book on Fuel Economy.

142. *Kansas.*—*Noticing your Library ad. I would like to know if you have a book dealing with burning coal—how to get proper combustion and how to use it to get the best results—how to tell the best coal for various purposes, etc. Please quote price in answer.*

We would suggest that you read "Smoke Prevention and Fuel Economy" by Booth. The price of this book is \$2.50 postpaid, and we believe you will find the information contained will save you many times the amount named.

Paving Brick

The Eastern Paving Brick Manufacturers' Association, which was launched at a meeting held in the Fort Pitt Hotel some time ago, exclusive mention of which was made in "Brick and Clay Record" at the time, is doing a large amount of work although very little is being said about it. Following the organization meeting, a general executive committee meeting was held in the rooms of the Committee on Mines and Mining at Harrisburg, Pa., the afternoon of May 8, and this was followed by other committee meetings held in the Fort Pitt Hotel at Pittsburgh June 14. At this last meeting the membership was invited. The idea of giving a banquet at Harrisburg before the present session of the Legislature adjourns, has been given up.

In order that the paving brick industry may create a credit bureau it has been asked that manufacturers advise the secretary and other members of the credit bureau, the names of contractors who have become delinquent in the payment of their accounts. This credit bureau will be the first of the character ever established in the brick trade, and it is generally believed it will become national in its importance. Unfair and incompetent inspection of paving brick and blocks has been considered by the association in executive session and it is planned to take up all such inspections with a view to making an adjustment which will be equitable alike to the manufacturer, contractor and the people having the work performed. The primary point, however, is to protect manufacturers against those who do not know the general rules followed in the proper inspection of paving materials.

GOVERNMENT TO AID IN ROAD BUILDING.

Present Indications Denote That 1913 Will Be Greatest Year in Road Building.

It appears from present indications that this will be one of the greatest years in history for new road construction, and it might be added that more liberal use of vitrified paving blocks and bricks will be used for this purpose this year than ever before.

Believing that good roads is just the proper caper at this time, a joint committee of Congress is engaged in an investigation of the feasibility of Federal aid in the construction, improvement and maintenance of public highways, and a number of the State legislatures now in session are considering good roads legislation.

In connection with the general impetus that the good road movement has recently had in all parts of the country, the Director of the Office of Public Roads says:

"Too much stress cannot be laid upon the importance of maintenance in connection with the work of improving the roads. The people in nearly all the states are filled with enthusiasm for road improvement and are spending enormous sums of money in the construction of superb roads, and yet almost without exception they are making little provision to care for the roads after they are built. This is true not only in the various counties, but under many of our state highway departments.

"To maintain the roads in good condition year after year requires a considerable annual outlay, but this outlay is infinitely less than the loss which must fall upon the people eventually if they allow their roads to go to utter ruin. The thing for all advocates of good roads to do is to urge continuous, systematic maintenance and the setting aside every year of an amount per mile estimated by the engineer in charge to be sufficient for the proper maintenance of the road—a course which must make for economy and efficiency."

Wallingford, Conn., is about to pave its main street and the "court of burgesses" is having some difficulty in making up its collective mind as to the best paving material. Up to the present time, brick has the preference, as some of Wallingford's foremost citizens have seen brick pavements in hilly sections of New York state and are convinced that brick is all right for Centre street hill. They dislike thinking that perhaps two different kinds of pavement will be used on the street between Colony and Main streets, and believe that a much handsomer road will result if one kind is used the entire distance proposed. Naugatuck has a nice piece of brick work in the center of the city and it is giving perfect satisfaction, and a large number of letters from city engineers are in the possession of the committee, all speaking well for this kind of work. The price quoted at the opening of bids makes it possible to use brick at a much less cost than some other materials named and, taking the beauty of a yellow brick road into consideration, together with its lasting qualities, people along the street believe it would be the ideal material.

Some claim it would be noisy, but as some of the engineers write, they are building for the future, and within a few years there will be little, if any, teaming done by horse drawn vehicles. There will be money saved if brick is laid and an effort is being made to have the burgesses vote for it.

MOTORISTS OPPOSE CREOSOTE BLOCKS.

The paving brick industry has a bright future in the East, says our New York correspondent, who further states: "As far as New York City is concerned, there is not much progress being made in the matter of inducing the authorities to correct the crying evil of laying the slippery and treacherous creosoted wooden block. The fact that automobilists are complaining of the skidding qualities of this type of pavement on wet days, has so far borne little fruit with the Bureau of Highways, but the increasing use of auto trucks is giving the paving brick interests a new and powerful ally in the auto-truck driver, and it is entirely probable that the automobile associations will be appealed to to use their influence with the city authorities to have some kind of beveled edge paving brick used."

Humane societies also are to be appealed to to use their influence to induce the city to adopt a paving material that will give horses a firmer foothold in rainy or sleety weather.

But in the suburbs, where the dust nuisance is becoming intolerable to dwellers and automobilists as well, there is a healthy demand developing which will compel Boards of Freeholders and county supervisors to pave, at least the center of roads with brick, instead of macadam. The Board of Trade of Newark and the Essex County Board of Freeholders, the Middlesex County Commissioners and several other boards have been appealed to by the New Jersey Automobile Association to take up the matter and good results are promised.

Sample Brick Road in Washington.

Fourteen manufacturers of paving brick contributed material for the sample brick road laid under the auspices of the National Paving Brick Manufacturers' Association, for the Office of Public Roads, United States government. This road is the extension of the Chevy-Chase road, leading out of Washington, D. C., to Chevy Chase Lake. In order to reach this road, visitors may take the 14th street cars and transfer to Chevy-Chase Lake cars at 15th and New York streets. Samples of all brick that went into the road have been preserved in the office of the association, for visual examination.



Peele Castle, One of the Interesting Brick Structures on the Isle of Man.

Quaint Manxland

NOTES FROM THE
ISLE OF MAN
THE HOME OF
THE TAILLESS CAT



FF from the beaten path of tourist travel, the Isle of Man, known the world over for the tailless cats which have made it famous, has kept inviolate from the hand of change some interesting structures of brick, whose antiquity runs back so far no man can tell just when or by whom they were erected. Notable among these is the ancient Peele Castle, located just outside the hamlet of the same name.

To visit the interesting ruin one needs hire a skiff in Peele proper and be rowed—by an oarsman who stands at his task—in a great broad bateau across the fiord to the foot of the castle. Admission is but a six pence (12c), on payment of which one is permitted to pass up strange steps of a red stone, built outside very red walls of the same. Off to the right there tower the actual walls of the castle. One's way extends through an



Famous Round Tower on Isle of Man.

arched passage, with an opening in the roof overhead and another orifice at the left, through which one can look out on the town composed of modern, white-plastered houses, the gulls soaring over and the smoothly-shorn hills behind.

Continuing the ascent of the stairs, ancient wooden doors admit us to the castle itself. This has been modernized to the extent of a recording turnstile. After tendering our admittance ticket, we pass into the grassy court which the buildings hem in. Peele Castle then unfolds to view its wealth of walls of old brick and mortar.

Directed by the guide book, which is sold at a penny, you note first this fore wall and how, over the point at which you entered, it is crowned by a square, serrated tower. From this the wall trends off to the right to a corner tower which, in its turn, leads to an isolated tower higher still. From this what seems a chapel of open-work extends parallel to the right wall for perhaps half its length. The rest of the quadrangle is enclosed by four severely plain walls, near which several old cannon serve to relieve the monotone. In the center is a lawn



Brickmakers' Scales in Use on Isle of Man.

sloping back to the road wall and at its center the old custodian sits, dusting his uniform and awaiting a possible victim.

At the left corner of this rear wall, but well out in this first quadrangle, an old ruined tower rises, notable for the exceeding redness of the brick from which it is made. Twenty-one steps and we enter another grassy court, starred with white clover, whose perfume fills the air. Looking forward you discover still a third court, its border wall rising only a foot or so above the level of the lawn where you stand. Beyond that the great bay opens out, with the brown-sailed fisher boats passing out, and beyond that may be seen the typical modern Manx city.

The wall extends round about this upper court. From it the interior seems to rise and fall, as in billows, of grass, enclosed, below by the walls. Well inside the third quadrangle there is a ruin of a chapel, built of alternate tiers of red and gray stone. Near it there stands an architectural curiosity, an almost perfect specimen of the ancient round brick towers, the top enlarged and giving a vantage point to overlook the far expanse of deep blue sea. The picture thus formed is strikingly lovely.

Face Brick

How often are you asked how much mortar it takes to lay a thousand brick? How often have you had to call up some mason-contractor and ask how much sand and cement and lime it took to lay a thousand brick and how many a man could lay in a day?

The knowledge is something you ought to have. It is called for nearly every time you attempt to convince a prospective home builder that brick is really cheaper than frame or cement construction, and your ignorance of these seemingly vital points in your argument cannot fail to have its effect upon the customer. There is a good chance that some of those frame house builders would have built in brick, had you been able to give them the information at the time they asked for it.

The following table is published by the "Building Age" and has been found accurate by mason builders:

Joints $\frac{3}{8}$	require	8 cu. ft. of mortar to the 1,000 brick.
Joints $\frac{1}{4}$	require	10 cu. ft. of mortar to the 1,000 brick.
Joints $\frac{5}{16}$	require	12 cu. ft. of mortar to the 1,000 brick.
Joints $\frac{3}{16}$	require	15 cu. ft. of mortar to the 1,000 brick.
Joints $\frac{1}{2}$	require	18 cu. ft. of mortar to the 1,000 brick.
Joints $\frac{5}{8}$	require	22 cu. ft. of mortar to the 1,000 brick.
Joints $\frac{3}{4}$	require	26 cu. ft. of mortar to the 1,000 brick.

These figures applying to both common and face brick, spread joints.

To lay 1,000 brick in lime mortar, with proportions of one of lime to five of sand and joints $\frac{3}{8}$ to $\frac{1}{2}$ in. will require:

3 bushels of quick lime @ 30c bu.....	\$0.90
18 cu. ft. sand @ \$1.50 cu. yd.....	1.00
	\$1.90

To lay 1,000 brick in Portland cement mortar, in proportion of one of cement to about three and one-half of sand and joints $\frac{3}{8}$ to $\frac{1}{2}$ in. will require:

1 $\frac{1}{4}$ bbls. (five sacks) of cement @ \$2.00 bbl.....	\$2.50
18 cu. ft. sand @ \$1.50 cu. yd.....	1.00
	\$3.50

These proportions are fairly extreme, the first being "poorer" than required by the building codes of some cities and the second "richer" than is required for any but the most exposed work. The prices given on lime, sand and cement are, of course, given as a basis for comparison.

As for the number of brick a "good mechanic" (meaning a bricklayer who lays steadily and works in a fairly fast gang) can lay in a day is, as General Hancock said about the tariff, "a local issue." In a city where bricklayers' wages range from 65c to 70c an hour, common brickwork is laid for from \$5.00 to \$7.00 per thousand, depending upon the construction and thickness of the walls. Face brick cost from \$15.00 to \$25.00 per thousand to lay, depending upon the number of openings and the general construction. These prices include hod carriers' and mortar-mixers' wages, which are about half those paid the bricklayers.

BIG BUSINESS DONE BY UTAH FIRM.

Extensive Business Built Up Since Concern's Establishment in 1904.

It is not generally known that Salt Lake City, Utah, boasts a clay plant that turns out a great diversity of products consisting of face brick, sewer pipe, conduits, fire proofing, floor tile, all varieties of fire brick, crucibles, etc.

The Utah Fire Clay Co., which operates the plant, was established in 1904 and since its inauguration has not only grown to mammoth proportions but has also absorbed a

number of smaller concerns. With the facilities of this company, placed in concrete form under good managing heads the result has been the growth and development of a concern whose business scope embraces the entire intermountain country and practically the entire west.

The offices of the company are located at 1098 south First West street, while immediately behind and around is situated the plant. This immense factory occupies 10 acres of ground. Passengers on the southbound San Pedro are attracted by the vast yards, in which are tiers of all kinds of finished product, awaiting shipment in the filling of orders. Stack after stack rear their towering heights to the sky, indicating the industry going on within the buildings.

The company is managed by men of experience in practical and financial ways. The executive head is Lawrence Greene who is president and general manager. H. W. Reed is vice president; L. S. Hills is treasurer; and T. R. Ellerbeck, secretary.

Among the various varieties of goods put out by this company may be mentioned its daily capacity of 20,000 fire brick. These brick compose all styles and colors, including the famous Denver "blue," buff, and one of its own design, a beautiful glossy "granite" brick.

Two years ago the same company established a branch factory in Murray which is running practically all the time at full capacity. The Utah Fire Clay Co. has established business relationship with all the important cities and towns in the intermountain country. Representatives are on the road all the time, covering the states of Utah, Idaho and Nevada.

Its diversified output places the company in a position to seek all kinds of business. Manufacturers of all styles of fire clay products, the company makes sewer pipe, fire brick (as has been stated), all styles of face brick, fireproof partitions, flue linings, fire tile, conduits, hollow tile, flat arch flooring and crucibles. Crucibles manufactured by this company are used not only in the intermountain region but as far east as Chicago, and on the Pacific coast.

J. L. Buckley has assumed the management of the Hydraulic-Press Brick Co.'s office at Davenport, Ia., and will divide his time between the "Three Cities" and the Continental Brick Co.'s plant at Aledo, Ill., the output of which was recently purchased by the Hydraulic-Press Brick Co. Mr. Buckley was, up to a few years ago, sales-manager for the Western Brick Co., of Danville, Ill.

Theodore C. Lundy, vice-president and general manager of the Lonsdale Face Brick Co., of Knoxville, Tenn., died recently, after a short illness. He is survived by a widow, four daughters, two brothers and a sister. Mr. Lundy was in his sixty-seventh year and had been prominent in business circles in Knoxville, where he had been a resident for the past ten years.

A new town in Kansas, called Elkhart, is taking considerable material, including face brick. That is one of the favorable signs of the times—it once was that new towns built in wood, and waited to burn up before they used brick.

The San Pedro (Cal.) Brick Co., reports sales of more than 5,000,000 face brick, so far this season, and as the capacity of their plant is only 250,000 a week, this advance sale will keep them busy for some time.

Delatte & Lagrange are installing a brick plant at Lake Charles, La., the work of installation being under the direction of G. A. Kaupman, of 313 Moss Street, Lake Charles.

A new plant for the manufacture of face brick, is being built at Minden, Nev. Henry Luhrs of Carson City, Nev., is in charge of the work.

The Vallejo (Cal.) Brick & Tile Company is now taking up the manufacturer of dry-pressed face-brick.

Common Brick

A striking feature in the recent hearing of the Hudson river brick men was the claim of a constantly increasing cost of transportation, due to the disposition on the part of dealers and large purchasers to buy only as their immediate needs required and let the loaded barges await docking until the builders began to call for quick deliveries. This resulted in an ever increasing barge fleet, with a crew that must be paid or lost. A prominent member of the Building Material Exchange of New York city recently said that the greatest problem confronting brick-makers today was the handling of the brick from the kiln to the job. So-called "common labor" is becoming more and more scarce and brick are being handled in the most wasteful, expensive and slipshod manner possible to conceive. What is needed is a system that will entail one handling from kiln to job—a crate system wherein each crate would contain 500, 750 or 1,000 brick—so arranged that no hand would touch the brick from the time it was crated until it was placed on the scaffold and the crate removed. Crates could be made to fit the chassis of the motor-truck and the hoisting apparatus could hoist the crate load of brick to the proper floor while the motor-truck is taking the empties back to the barge. Compared with the present cost of handling, which includes loading the barge, unloading it at the dock, unloading the truck, putting into a barrow, wheeling the barrow to the hoist-elevator and then wheeling it to the scaffold, the crate system would seem to have some advantages.

The Washington Water Power Co., of Spokane, Wash., has leased the plant and yard of the Chewelah (Wash.) Brick & Lime Co. and will manufacture common brick.

Daniel & Hogg will erect a brick plant at Pleasanton, Texas.

Tests are being made of a clay bed near Bryan, Tex., with the view of erecting a large brickmaking plant at that point, providing the clay is found to be suitable.

O. A. Miltz has resigned his position as superintendent of the Mamer Brick Co., at Benton Harbor, Mich., and accepted a similar position with the Dominion Brick Co., of Ste. Therese, Quebec.

Neil Allen is installing the machinery in the Mid-West Brick & Tile Company's plant at Waverly, Mo.

The C. P. Mayer Brick Co., of Bridgeville, Pa., recently purchased a farm of 119 acres, clay and shale land, partly underlaid with a six-foot vein of Pittsburgh coal.

A new brick plant is being erected at Milton, Pa., which will be in operation some time during the early fall. It will be equipped with electric power throughout and have a capacity of 100,000 brick per day. The Wilson kiln and dryer system will be installed. The owners are the Milton Brick Co., Inc., the general manager being Thomas M. Wilson, who is now in charge of the installation.

Property consisting of several kilns and about sixty acres of clay land was bought in at a receivers sale, on the 23rd ult. by the mortgage creditor of the Lake Brick Co., of Baton Rouge, La. The property lies north of Baton Rouge on the University Lake. Looks like a good opening for a live brick man—southern port property is going to boom when the Canal opens.

A license was issued on the 2nd inst. to the Construction Material Sales Company, with a capital of \$100,000, to sell building stone, brick, partition tile, etc. Clarence May, H. A. May and E. H. Tillson are incorporators. The offices will be in Chicago, Ill.

In Arcadia—that is, Arcadia, Kas.—they have a paper called "The Sunlight." They also have a philosopher and poet in Hank Glor, who tells a "Sunlight" reporter that fifteen years ago he worked 40 days on Nels Smith's barn and received \$40 for the work or \$1.00 a day. He recently worked four weeks at the Oskaloosa (Kas.) Brick Co.'s plant and received \$81.00 for the 24 days. He says:

Oh, what changes time has made,
Turns one dollar into four.
We get three and half a day,
Still we sigh and wish for more.

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CHARLES A. SEARING, Engineer

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GALESBURG, ILL.

Fire Brick

Some idea of the capacity of some of the new plants that have come into being within the last few years, can be obtained from the figures given for the Potomac Fire Brick Co., of Piedmont, Va., which will have an output of 2,500,000 per year—which is added capacity to the Savage Mountain Fire Brick Co., of Frostburg, Md., where the output has been increased to 5,000,000. These companies make a specialty of roofing brick, where the changes of temperature are very quick and where, at the same time, the high heat is generated. The Savage Mountain and Potomac brick are adapted for heat, puddling, malleable and blast furnaces and for large boiler work.

Charles A. Searing, a well known engineer, has severed his connection with the Harbison-Walker Refractories Co., where he has been in charge of their engineering department for a number of years. He is a native of Illinois, a graduate of the University of Illinois and has been associated with architects both in Chicago and Pittsburgh. He is now devoting his energies to plant designing and has a number of plans for new plants, on display in his office in the Farmers' National Bank Building in Pittsburgh.

NEW REFRACTORY CEMENT STANDS 3100° FAHR.

Especially Useful for Use in Laying up Brick to be Exposed to Heat.

Until within the last few years, fire-clay has been most generally used for laying up brick walls, cementing joints, patching and lining of furnaces, kilns, retorts, etc., where high temperatures are encountered. In spite of its exceedingly short term of usefulness, and the consequent necessity for repeatedly patching and repairing, founders and furnace men have until recently continued to use this material because there has been no substitute which could be generally used. Oft-times the fire-clay was mixed with certain other materials to serve as "binders." Of course, this "mixing" or compounding entailed considerable trouble and labor but there had apparently been no alternative than to follow precedent.

The H. W. Johns-Manville Co., New York, whose high temperature cements have become favorably known in recent years has recently put on the market what they term "J-M high temperature cement No. 31" which it is said can be used practically whenever working temperatures range between 1,500° and 3,100° Fahr.

This new material is a dry powder mixture composed of asbestos and other materials of secret preparation. It is mixed with water to the proper consistency (say about 18 to 20 lbs. of water to 100 lbs. of powder) for working like mortar or tamping around molds.

When used for setting up fire-brick for boilers and furnaces, lining and roofing furnaces of various kinds, or moulded into door jambs, lining fire doors, repairing side walls of furnaces, making stay nut caps, etc., it has considerable mechanical strength. When air dried, it will withstand a crushing strain of 883.5 lbs. per square inch. It vitrifies at the comparatively low temperature of 1,418° Fahr. and has a high melting point (3,182° Fahr.)

Being semi-acid in character, it can be used with chrome bricks, silica bricks or fire-clay bricks.

It is claimed that experiments conducted with this cement show that it can be successfully used in building doors of angle iron framework without backing.

Kiln and Burner

In burning face-brick, particularly when the material being used is fire-clay, it oftentimes happens that the lower benches do not come out a good color, especially when the top has not been carried as far as it might have been. Of course, if these lower benches are underburned and will not give out a good ring, it is cheaper to throw them into the cull pile, or burn them over between the bag-walls, than it is to let them go out and raise trouble for the balance of the shipment. But if they are good, hard-burned brick, and the only trouble with them is the color—or lack of color—try “bug-dusting” a kiln. That is, give it three or four doses of “slack” about three or four hours apart, when the kiln is on high fires, and just before you get ready to shut it down. A dose will be about two shovelful to each fire-box. If you take out the bottom “peep brick” you will see the black coal-dust come right through the heat and settle, for a moment, on the shining bricks in the kiln—then it burns right off, but it does leave a little color, and tends to bring the off-shade bricks in shade with the others. It can be used to advantage in connection with rough-face brick and ought to increase your percentage of firsts.

Learn to Regulate Your Fires.

There is a knack in firing a kiln as all burners know. The following excerpt from the paper read by Anton Vogt at the recent Chicago convention of the N. B. M. A. contains some excellent suggestions: “A burner that knows his business when heating up a kiln, fires light and gives air over the fires, until the heat shows plain on the bottom of the kiln; that is, as long as we see a bluish vapor, the product of burning carbon, coming out of the stack, we fire light; we fire open, letting air into the kiln; we prevent reducing conditions; and then, when we consider the kiln safe, we fire heavier, at longer intervals, to start the settle, and the result, the fruit of our labor, will be a good kiln of burned clay. We must not overdo things; we must use judgment when to stop. Many burners can't stop in time; they want to get the kiln too good; and that is where many fall down; they can't leave good enough alone, especially with a clay that has a narrow range between vitrification and fusing or getting out of shape. It burns plenty hard enough for all purposes at a certain degree of heat, but, if we continue a few fires longer, we may find, on emptying the kiln, that a great deal of the ware is ruined, and the damage has been done in a few fires too many.

The 1913 Prize Bungalow.

The Algona Brick & Tile Works writes us asking for the name and address of the architect who drew the plans for the \$2,000 bungalow, shown at the Clay Show in Chicago in March, 1913. Mr. Walter Burley Griffin, of 104 S. Michigan Avenue, Chicago, Ill., was the man who designed this little house, and through his courtesy, “Brick & Clay Record” will be able to reproduce the plans and elevation of this charming residence in the July 1st issue.

See Our List of
CLAYWORKERS BOOKS
PAGE 1055

Sterling Brick Company OLEAN, N. Y.

Manufacturers

OLEAN BLOCK Dunn-Wire-Cut-Lug

Made from shale
VITRIFIED

Many are not as good,
A few may be as good,
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Vitrified Shale Paving Blocks, Fire Clay
Paving Blocks, Dunn Wire-Cut-Lug
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Marion Brick Works MONTEZUMA, IND.

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A Strictly High Class Paving Block

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Manufacturers of

The Unsurpassed Danville Paving Block

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Cars — Rails (from 12 to 70 lbs.) in Stock

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Switches, Frogs and Turntables

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Plant: KOPPEL, PA.

ORENSTEIN - ARTHUR KOPPEL CO.

**Sewer Pipe**

After having been idle for six years, the old Uhrichsville, (Ohio) Sewer Pipe Co.'s plant has resumed operations. This is one of the first manufacturing industries located in Uhrichsville. The property has passed into the hands of the American Sewer Pipe Co., who will make segment blocks for sewers from 30 in. to 108 in. in diameter.

A. W. McClure, formerly with the American Sewer Pipe Co., has left that concern and has taken a position in the brick and sewer pipe department of the D. J. Kennedy Co., succeeding George B. Gardner, who resigned to go to Cleveland, Ohio. Mr. McClure is one of the best known sewer pipe salesmen working out of the Pittsburgh district.

The largest sewer work now in prospect on the Coast is at San Diego, Cal., where figures were recently taken on over 80,000 ft. of vitrified pipe, 62,000 ft. being 6-in. and the rest from 8 to 24-in. diameter. Deliveries are under way, however, for a great many small jobs around the country, and arrangements are being made for bond issues for several fairly large projects. The town of Berkeley, Cal., has voted bonds amounting to \$475,000 for sewer improvements, and the town of Long Beach is preparing to spend \$350,000 for new sewers.

Two miles of trunk sewer were finished early in 1912, at Sand Point, Idaho, and five miles of laterals during the first months of 1913. The construction of the system of laterals was done on the day labor plan, under the direction of the city engineer, his estimate being considerably lower than any received from contractors bidding. Careful records of costs were kept and the results are valuable for purposes of comparison, not only because the work was done in Idaho, where conditions are somewhat different from other parts of the country, but on account of its being done by direct labor, a plan which has caused discussion in many cities ever since the idea was first suggested. The following interesting data is taken from the city engineer's report: Vitrified clay pipe, 8 in. and 10 in. 23,710 ft.—cost of 8 in. \$0.1711 per ft., \$3,904.58—cost of 10 in. \$0.2475 per ft., \$246.66; 6x8 Y's, 79c each, 6x10 Y's at \$1.03 each, \$530.86; stoppers at 5c each, bends at 4½c, \$164.05; castings and covers at \$11.35 per set, \$885.30; dust pans and lugs at 1.26 per set, \$100; iron steps at 14c each, \$62.86; lagging at \$13 per M., and strips at \$27 per M., \$576.85; trough, fir, pine and tamarack, at \$11 per M., \$568.51. Sand, at 75c per yard, \$249; gravel, at \$1.50 per yard, \$131.10; brick, at \$8.25 per M., \$627.80; cement, at \$2.73 per bbl., \$1,862.30; construction of manholes, at \$1.90 per foot, \$1,187.87; lime, at \$1.50 per bbl., \$48; oakum, at 7c per lb., \$58. Trencher rented at \$20.42 per day, including freight on same, \$1,439.67; tools and repairs, \$593.25; flush tanks, at \$36.25 each, \$496.99; miscellaneous items of cost, \$1,872.52. Labor, at \$2.50, \$3 and \$3.50 per day, teams at \$6, \$10, \$20.45; superintendence, at \$5 per day, \$780; engineer, \$175 per month, \$1,176.75; assistant engineer, at \$6 per day, \$496.45. Total cost of construction, \$28,479.82; actual cost per foot, \$1.13. The engineering cost was 4 per cent of the whole.

Fire Brick Facts For Kiln Builders

Do not overlook the quality of Fire Brick used in inner walls, crowns and fire arches of your kilns; this is all important. When fire brick begin to give away the whole kiln is impaired.

No brick construction will stand under strain of gradual contraction account of poor quality fire brick.

Consult us in advance of placing your orders.

Davis Fire Brick Co. Oak Hill, O.**BRICK MAKERS**

Many of the largest users in your line, after costly competitive tests and experiments, are now specifying—

Evens & Howard Fire Brick

BECAUSE OF

QUALITY, PRICE AND SERVICE

We will be pleased to furnish complete information and quote prices on request.

**EVENS & HOWARD FIRE BRICK COMPANY
SAINT LOUIS**

Established 1856

HENRY MAURER & SON

Manufacturers of

High Grade Fire Brick

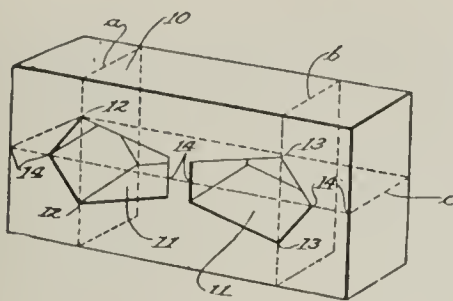
Our "Henry Maurer" No. 1 quality Fire Brick is recognized throughout the country as a standard article. We make all shapes and sizes for kiln-work and all other requirements. Catalogues on application. We solicit your inquiries.

Office: 420 East 23rd St. New York, N. Y.

Works: Maurer, N. J. (On L. V. R. R. and C. R. R., N. J.)
Philadelphia Office: Pennsylvania Building**WANT A SITUATION?**

There is the right place for the right sort of a man somewhere. The problem is to get the two together. Our Classified Ad pages bring them in touch with each other.

Recent Inventions



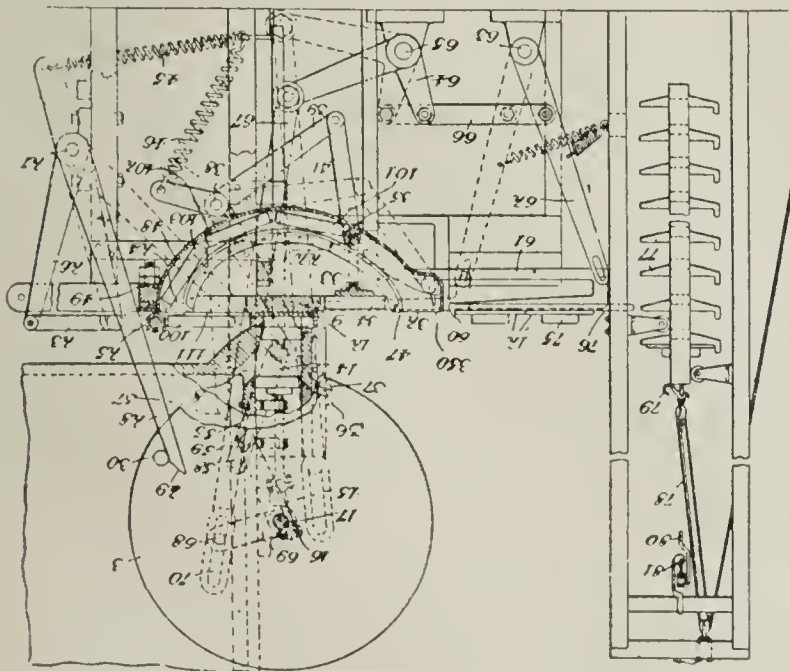
1,027,407. BRICK. George Hyde Emery, Des Moines, Iowa, assignor to The Des Moines Clay Manufacturing Co., Des Moines, Iowa, a corporation of Iowa. Filed April 6, 1911. Serial No. 619,240.

As a new article of manufacture, a brick rectangular in outline and having a plurality of polygonal openings symmetrically disposed therein, said openings forming three planes of least resistance through the brick, one of said planes passing through the center of said brick from end to end.

As a new article of manufacture a brick of rectangular outline having a polygonal opening therein near one end of the brick, said opening having one of its corners near the end of the brick at the center, said opening having other corners lying in a plane transverse to said brick and forming a transverse plane of least resistance so that the brick will break when struck opposite said corners.

As a new article of manufacture, a brick having a plurality of polygonal openings designed to provide three planes of least resistance, so that the brick will break evenly when struck at points in said planes.

As a new article of manufacture, a rectangular brick having cut away portions designed to provide three planes of least resistance so that the brick will break evenly when struck at points in said planes, one of said planes passing through the center of said brick from end to end.



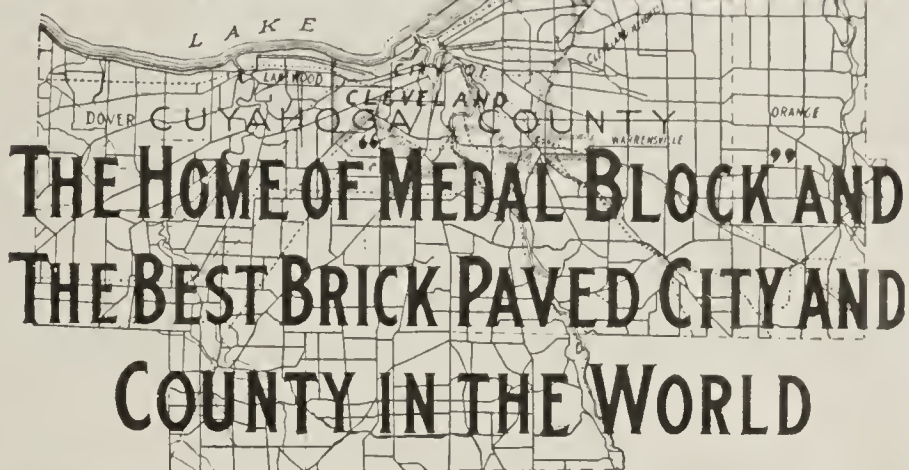
1,012,290. BRICKMAKING MACHINERY. David Strickland, New York, N. Y., assignor to The American Clay Machinery Co., Bucyrus, Ohio, a corporation of Ohio. Filed Aug. 9, 1909. Serial No. 511,901. Renewal Oct. 7, 1911. Serial No. 653,399.

In a brick machine, the combination with a mud press, of a sand receptacle located below the press and having its receiving opening in front of and its discharge opening at the rear of the press.

The combination with a brick molding press embodying a pressing plunger, driving mechanism from the plunger and a table for supporting the mold under the plunger, of a sand box located under the table, a guide for directing the sanded mold out of the box and onto the table, and means actuated by the said driving mechanism for advancing the said mold across the table.

THE DECKMAN-DUTY BRICK CO.

CLEVELAND, OHIO.



FIRE BRICK

DOVER FIRE BRICK CO.

Incorporated 1870

— MANUFACTURERS OF —

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Unexcelled for Kiln Purposes

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AJAX

FIRE BRICK



Two of the many hundred kilns built of these famous brick. Are you using them?

Write for price and catalogue.

Chicago Retort & Fire Brick Co.

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CERAMIC ENGINEERS
FACTORY ARCHITECTSGEOLOGICAL EXAMINATION OF PROPERTIES
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PLANTS DESIGNED, CONSTRUCTION SUPERINTENDED
AND OPERATIONS DIRECTED

DRIERS, FURNACES, KILNS

REMODELING OLD PLANTS GIVEN SPECIAL ATTENTION
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Pamphlet, "Ceramic Engineering." Free

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The Frink Pyrometer Co.

does not end at the mere **selling of Pyrometers**, but is most strongly supplemented by our practice of introducing **the Frink method of burning** during the installation of our Equipment. Our experience is yours for the asking. Write **us**.

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"Buckeye Rails Are the Standard for Quality"

THE BUCKEYE ROLLING MILL COMPANY

Exclusively Manufacturers of First Quality Light Steel
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All Sections from
12 lb. to 40 lb.
per yardWrite or
wire us,
when in need.No order too large to handle promptly or too
small to secure immediate attention.

Absolute Control of Temperatures in all Kinds of Kilns and Furnaces

Heraeus Le Chatelier

PYROMETER

Recommended by the highest authorities

For measuring temperature between 0 and 1600 deg. Celsius, equal to 2920 deg. Fahrenheit. Successfully used in establishments for the manufacture of Brick, Pressed Brick, Terra Cotta, Pottery, Porcelain, Stoneware, Chamotte, Cement, Glass, Iron and Steel and other metals, particularly for Hardening and Annealing, also for Molten Metals, Cartridges and Ammunition, Chemicals, Gas Accumulators, and by Boiler Inspectors, Schools and Colleges.

Heraeus Patented Electrical Furnaces

For Laboratory and Experimental Use

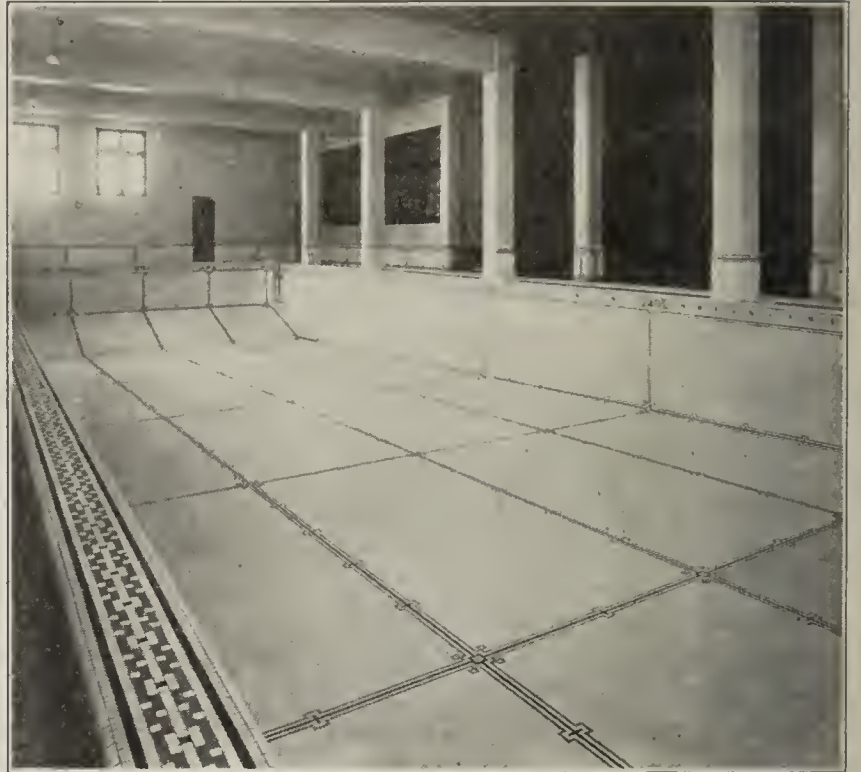
Fused Silica Ware of Every Description at Moderate Prices

Heraeus Patented Fused Quartz Glass Articles

of every description. This Heraeus Patented Fused Quartz Glass is not affected by any changes of temperature whatsoever, and the co-efficient of expansion is only 1-17 that of platinum. It is of the utmost importance for all purposes where the above qualities are essential. Write for information. Pamphlets and References on Application.

CHARLES ENGELHARD, Hudson Terminal Bldg.
30 Cortlandt St., NEW YORK CITY

Encaustic Tile



Swimming Pool at Syracuse, N. Y.

Another "cement failure" is its application to swimming pools. Instead of reflecting the pure white surface of tile or brick, and giving to the water that attractive green shade that invites immersion, its naturally unattractive lack of color is accentuated by the dampness and a murky, disagreeable effect is given. Beside this, it is dangerous; a swimmer suddenly taken with cramps, or unconscious as a result of a fool-hardy dive, might lie at the bottom of the tank for some time before he was seen. Indeed this very thing has happened, and the veneering of the swimming pool should be with a sanitary and light reflecting material, so laid as to form an intimate union with the Portland cement mortar in which it is set. In the illustration above is shown the pool at Syracuse (N. Y.) University, the tiling in which was installed by the Robertson Art Tile Co., of Trenton, N. J.

Wall and floor tile may be applied to every known sub-structure without any special preparation. Brick or concrete walls and hollow tile construction may receive the tile, after being covered with a scratch coat. Studded walls, or all partitions constructed of wood, should be provided with metal-lath furring, as wooden laths might disrupt the structure by shrinkage or swelling. Floors should be laid on strong concrete, spread over the sub-floor and, in case of wood construction, between the joists.

Vitreous floor tile are practically indestructible. Abrasion tests have shown them to be superior to every known natural stone and glass may be easily cut with a sharp corner of a broken piece of tile. It is impossible to stain it and antiseptic solutions or other acids will not attack, dissolve or disintegrate its surface. The cleaning of vitreous tile is a simple and easy matter, thus assuring sanitary precautions where the lightness of the task makes it welcomed by servants. This, with the excellence of its appearance and the artistic results that can be obtained at a very low cost, recommends it to the thoughtful architect, builder and home-buyer.

It is the desire to make this department not only instructive but newsy and the co-operation of our readers is asked. Send in any little items of interest or suggestions that may benefit someone.—THE EDITOR.

CHALDEANS, NOTICE!

The monthly tablet will be printed hereafter only
on the First of each month

With the Potter

Because of the offer of cheap natural gas for fuel purposes, in addition to ten acres of real estate, there is every reason for believing that the American Electric Porcelain Co., with headquarters at East Liverpool, O., will remove its largest plant from there at an early date to Clarksburg, W. Va. The matter has been kept quiet for several weeks, and outside of the people directly interested, the public has not been advised. The Clarksburg Board of Trade made the East Liverpool company a proposition, and representatives of the concern spent several days in Clarksburg. For a year or more the manufacturers who have been using natural gas for fuel have been notified of increase after increase in the price of gas until the time has come when it is believed that many pottery manufacturers will leave the Ohio district and enter the West Virginia field. While the potteries in Newell and Chester, W. Va., pay the same rate for gas as the East Liverpool manufacturers do, it is because the same gas company controls the outlet in both districts. In late years West Virginia has been coming rapidly to the front as a pottery producing state, and it is generally believed, that should its supply of natural gas hold out it will bring a number of other pottery and electrical porcelain plants within its borders.

John W. Fenton, who has been making his headquarters at the Ft. Pitt Hotel, Pittsburgh, Pa., has announced his intent to build a tile plant and a cooking ware pottery at Avonmore, Pa., a large deposit of clay suitable for these purposes having been located.

The plant of the Bohemian Art Pottery Co., at Falls Creek, Pa., has been taken over by William Lytle, of the firm of Armstrong & Lytle, Pittsburgh, Pa., and it is said the new owners will make a new line of art pottery, the output of which will be taken by a retail syndicate with headquarters in New York. Improvements are being made in order that production will be increased, and it is planned to give employment to about 100 workers.

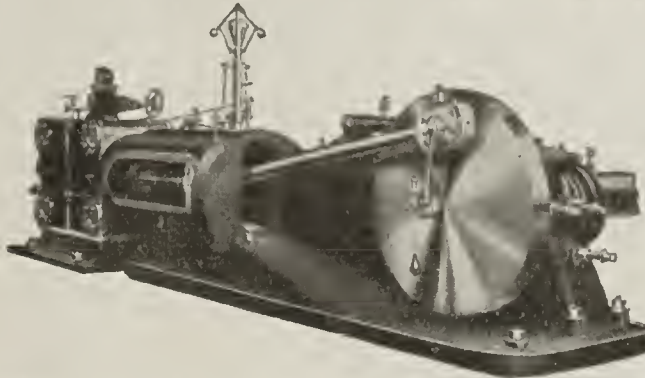
Charles C. Ashbaugh, secretary-treasurer of the West End Pottery Co., of East Liverpool, O., will be appointed to serve out the unexpired term of secretary of the United States Potters' Association, caused by the death of John T. Cartwright, of the Cartwright Bros. Pottery Co., who was elected at the Pittsburgh meeting last fall. However, Mr. Ashbaugh will serve only until the next fall meeting, when it has been agreed that another shall be selected to fill his position.

Repairs have been completed to the plant of the New Castle Pottery Co.'s plant which was recently purchased by the Shenango China Co., and the property has been placed on the active list, manufacturing vitreous hotel china. The business is under the management of James M. Smith.

Pottery to the value of \$46,059,694 was manufactured and sold in the United States in 1912, according to a statement issued by the Geological Survey. This represents an increase of \$1,989,064 over the preceding year. The effect of the wave of hygienic education which has swept the country is felt in an \$870,797 increase in the production and sale of sanitary ware. Ohio continues to be the chief pottery producing state in the Union. New Jersey comes second.

M. Lacheveque, a French authority, has found that many glazes become dim instead of glossy, and have minute whitish specks in them instead of remaining quite transparent, because of the presence of flourine in small quantities in the materials. The flourine, according to this investigator, causes the partial volatilization of silica, which upsets the "balance" of the glaze and causes it to go blind. This view is by no means in accordance with those expressed by other investigators, but it is interesting as a possible explanation of what does occur in some instances.

POWER PLANTS COMPLETE CORLISS ENGINES, WATER-TUBE AND TUBULAR BOILERS



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Catalogue
No. 65-B

Murray Iron Works Co. Incorporated Feb. 1, 1870
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One customer using Brown Pyrometers writes, "Had we had your Pyrometers when we started in business 20 years ago we would be rich today." Why don't you start right at once?

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Our
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TRAUTWEIN DRYER & ENGINEERING CO., 417 S. Dearborn St.
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PERFORATED METAL SCREENS

As required for
**BRICK
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CARBONDALE, PA.

On Hardest Drive



In This Big Plant

The etching on the left shows a **GANDY Belt** being used for *crusher drive* at the plant of the American Zinc, Lead & Smelting Company, Cartersville, Mo.

This company writes us: "We have been extensive users of **GANDY Belts** for a number of years, and have found them most satisfactory."

The GANDY Belt

is the pioneer stitched, cotton-duck belt made water, steam and heat-proof. 36 years have proven its success

In The Brick Field

It is not affected by atmospheric changes. Costs $\frac{2}{3}$ less than leather and much less than rubber belting.

Write for a sample of the **GANDY BELT** today—a postcard will do.

THE GANDY BELTING CO.
732 Pratt Street, BALTIMORE, MD.

New York Office: 88-90 Reade Street

Terra Cotta



New York State Educational Building, Albany, N. Y.,
Palmer & Hornbostle, Architects.

At a cost of \$5,000,000, including the site, the New York State Education Building is, at last, completed and houses the various departments for which it was originally designed. Its dimensions are, approximately, 700 ft. length, 110 ft. deep and 128 ft. high on one end—148 ft. high on the other. A rear wing, 185 ft. x 170 ft., adds to the capacity, while not affecting the architectural proportions of the structure. As will be seen from the above illustration, the building is classical in design, a colonnade of thirty-six columns extending along the entire front. Behind this colonnade in an ample arcade, the wall being broken by a series of large semi-circular openings. The floor of the arcade is constructed of clinker brick brought from England. Gray granite from Maine is used for the base. The front and end walls are of

THE COAST LINE TO MACKINAC

DETROIT,
CLEVELAND, BUFFALO,
NIAGARA FALLS,
TOLEDO, PT. HURON,
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**THE
CHARMS
OF SUMMER SEAS**

Spend your vacation on the Great Lakes, the most economical and enjoyable outing in America.

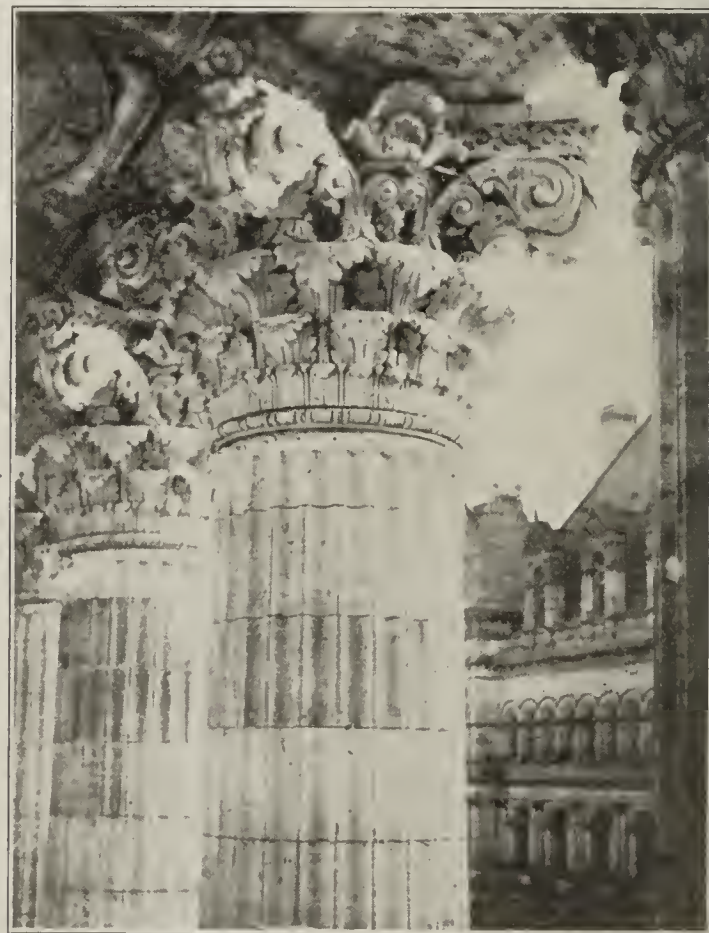
Daily service is operated between Detroit and Cleveland, Detroit and Buffalo; four trips weekly between Toledo, Detroit, Mackinac Island and way ports; daily service between Toledo, Cleveland and Put-in-Bay.

A Cleveland to Mackinac special steamer will be operated two trips weekly from June 15th to September 10th, stopping only at Detroit every trip and Goderich, Ont., every Monday up-bound, Saturday down-bound.—**Special Day Trips Between Detroit and Cleveland, During July and August.**—Railroad Tickets Available on Steamers.

Send 2 cent stamp for Illustrated Pamphlet and Great Lakes Map

Address: **L. G. LEWIS, G. P. A.**, Detroit, Mich.
Philip H. McMillan, Pres.
A. A. Schantz, Vice-Pres. and Gen'l Mgr.

**Detroit & Cleveland
Nav. Co.**



Terra Cotta Capitals, New York State Education Building.

white Vermont marble, the capitals of the columns being of glazed terra-cotta. The rear walls are constructed of light colored vitreous brick and terra cotta.

Forty years covers the history of architectural terra-cotta as that material is understood today. The crude

specimens manufactured in the late 70's were of the most commonplace types as compared with the attainments of today, when the patterns are made by artists of the highest order and the work of manufacture is done by experts at every point in the process. Perfection has been sought and realized in the latter day work with this material. The results are everywhere about us and the industry is growing with a rapidity that has a significance for the future artistic embellishments of our cities and our suburban districts. In Chicago, where the soft coal smoke is still a nuisance, although every good Chicagoan denies its existence, white glazed terra-cotta has become the recognized facing for the great business buildings, especially in the shopping district.

With white or cream colored enamel brick in the courts, these buildings present a truly impervious front to the gas and soot laden air. Once a year or, perhaps, once in two years, men are set to work washing down the entire exterior surface of these mammoth shops, with a seemingly brand new building as a result. The washing is done with soap suds or with one of the familiar scouring compounds that are properly used in household life, care being taken not to scratch the glazed surface of the terra-cotta. If the washing is carefully done, there is no reason why the buildings should not be susceptible to the same process and look just as bright, after washing, a hundred years from now, as they do today, with their faces newly scrubbed and the scaffolds folded away.

Who's Who in Clayland



D. E. REAGAN,
President Hocking Valley Products Co.,
Columbus, Ohio.

Taking his place among the more progressive brick manufacturers and advertising his product with page display and color work, D. E. Reagan, of the Hocking Valley Products Co., of Columbus, Ohio, is creating a demand for his "Greendale Rug" brick that is the envy of other manufacturers, whose output, while excellent, has been so small that it did not warrant their buying so much publicity as Mr. Reagan is using. His advertisement in the "Brickbuilder" for April is a model of what brick advertising should be, followed, as it is, by the two-page color insert in the May issue of that splendid paper. Mr. Reagan intends to be and will be, "among those present" in that day to come when the big producers dominate the industry.

The "Martin"

BRICK MACHINERY






Modern YARD SUPPLIES






Soft-Mud or Stiff-Mud Processes

Get Our Plans

Dry or Wet Grinding Pans

Barrows and Trucks

Disintegrators

Clay Cars--Dryer Cars

Hoisting Drums

The Henry Martin Brick Machine Mfg. Co.

GET MARTIN PRICE LIST



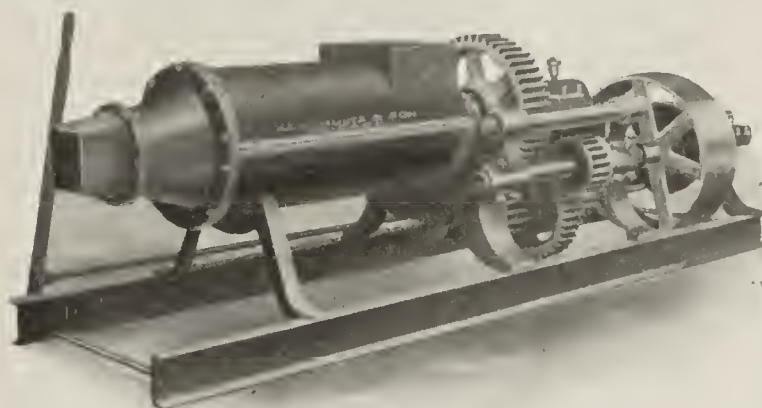
LANCASTER PENNA. U. S. A.

GET OUR BIG CATALOG

SCHULTZ EQUIPMENT

For Brick, Tile and Terra Cotta Plants

We make a specialty of designing and furnishing complete machinery equipment for all kinds of clay-working plants, including expert engineering service in supervising erection and installation.



Double Pug Mill equipment, especially designed for the perfect preparation of material in the manufacture of terra cotta.

SCHULTZ HEAVY DUTY FRICTION CLUTCH

suitable for all purposes. If you are having clutch trouble, write to us and we will show you the way out of your difficulties.

Complete brick plants furnished promptly, including auger machines, pug mills, clay cars and granulator shafts.

Cutting and cut steel gears always in stock for brick machines, also granulator knives.

Remember, we are brick works engineers and will be glad to advise you regarding any improvements or repairs which you contemplate.

A. L. SCHULTZ & SON, 1675 Elston Ave., Chicago

Telephone Monroe 1629

We also make a complete line of Power Transmission Appliances, Engines and Boilers,

THE GREATEST ECONOMY

is effected through the use of up-to-date methods and equipment.



The Martinsburg Brick Wagon

is the last word in up-to-date delivery equipment. Not an experiment but proven by the most thorough tests under hardest conditions.

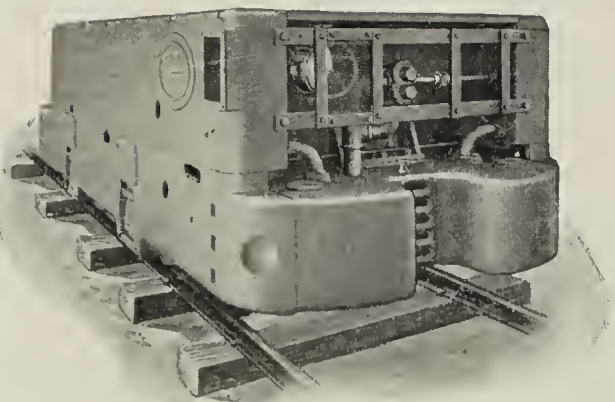
Slides out the load in one minute and doesn't chip a brick. No complicated mechanism. Capacity 1400 to 2000.

AUBURN WAGON CO.

450 Race Street

MARTINSBURG, W. VA.

Gasoline Motors



Over 300 in Use—

Used by 150 Companies.

Used for Underground

or

Surface Haulage—

2½ to 16 Tons Weight.

Geo. D. Whitcomb Co.

Rochelle, Illinois

Freight Tariffs

Another instance of freight saving by the application of freight knowledge, comes to us from a brickmaker who ships from the Zanesville district, in Ohio. On a shipment to Waterville, Iowa, the rate is, as ordinarily quoted and shown in the tariffs \$3.65 per net ton—that is, \$2.00 per net ton to Chicago and \$1.65 from Chicago to destination. By routing "care C. G. W. at Chicago care C. M. & St. P. at Dubuque, Iowa," a rate is obtained which, although only 10c per net ton less, is some saving, and amounts to \$3.00 a car. The following changes in freight rates have been made since our last issue:

From Eastern Points.

From Brownstone, Pa., Brick, to Trenton, N. J., \$1.50 per net ton.

From Franklin Springs, N. Y., Brickbats, to Jersey City, N. J., \$2.00 per net ton.

From Kushequa, Pa., Clay products, to Hornell, N. Y., 90c per net ton.

From Montreal Harbor, Que., Import clay, to Ausable Forks, Ballston, Corinth, Fort Edward, and Mechanicsville, N. Y., and rate points, 10c.

From Penbryn, N. J., Common brick, to Baltimore, Md., \$1.45; To Washington, D. C., \$1.65; To Wilmington, Del.; \$1.25 per net ton.

From Middle West Points.

From Cape Girardeau, Mo., Brick, building or paving, to Thebes, Ill., 3½c; To Fayville, Ill., 4c; To Olive Branch, Tamms, and Ullin, Ill., 4½c; To Parks, Ill., 5c; To Joppa, Ill., 6c; To Grinnell and Boaz, Ill., 5½c; To Karnak, Rago, and Cypress, Ill., 5c; To West Vienna and Buncombe, Ill., 5½c; To Goreville, Hudgens, and Marion, Ill., 6c. This tariff is good in either direction.

From Hatton, Ohio, Hollow building brick and tile, to Adrian, Mich., 90c. To Detroit, Mich., \$1.00 per net ton.

From Keokuk, Iowa, Brick (except bath and enameled), to Hamilton, Ill., 40c per net ton.

From Monmouth, Ill., Brick (common and including hollow building brick), to Chicago, Ill., 95c per net ton.

From Mt. Vernon, Ohio, Brick and tank blocks, to Huntington, W. Va., \$1.50 per net ton.

From St. Cloud, Minn., Brick (except glazed and enameled), to St. Paul, Minnesota Transfer and Minneapolis, Minn., and rate points, 4c. To Fond du Lac and Superior, Wis., and Duluth, Minn., and rate points, 6¾c.

From Western Points.

From Altoona, Brickton, Canet, Peru, Paola, Neodesha, Iola, Gas, Fredonia, Coffeyville, Independence, Kas., and other Kansas points, Brick (except bath and enamel) and common building tile, to Santa Fe, N. M., 35c.

From Boynton, Pawhuska, Sapulpa, and Tulsa, Okla., Brick (except bath and enameled), to Argenta, Little Rock, Pulaski, Tenth St. Station and Tie Plant, Ark., 12c.

From Buffville, Kas., Brick (except fire, bath and enamel), to Tucumcari, N. M., 22½c.

From Denver, Colorado Springs, Pueblo and Trinidad, Colo., and points taking same rates, Brick (common, pressed, paving, ornamental and shaped), to Lincoln, Neb., 19½c.

From Fargo, N. D., Brick (except glazed and enameled), to Grand Forks, N. D., 5c.

From Iola, Kas., Brick, to Springfield, Mo., 5c.

From Pawhuska and Nelagony, Okla., Brick (except bath and enameled), to Memphis, Tenn., 12c.

From Seattle and Tacoma, Wash., paving brick to Boise and Caldwell, Ida., 27½c.

From Sheridan, Wyo., brick, to Cody, Wyo., 15c; to Clearmont, Wyo., 5c; and to Billings and Crow Agency, Mont., 10c.

(EDITOR'S NOTE—Readers are urged to write "Brick & Clay Record" reporting petitions and complaints filed and similar items which will be of general interest to shippers of clay products. Questions regarding freight matters will, when possible, be answered promptly by mail or through our columns.)

Sand-Lime Department

THE SAND LIME BRICK ASSOCIATION.

Headquarters: 211 Fillmore Ave., Buffalo, N. Y. Officers:

S. O. Goho, president, Harrisburg, Pa.

F. B. Allan, vice-president, Toronto, Ont.

W. E. Plummer, Jr., secretary, Buffalo, N. Y.

John L. Jackson, treasurer, Saginaw, Mich.

Executive Committee: G. Silvester, Calgary, Alta.; E. G. Chapman, Minneapolis, Minn.; E. M. Burchfield, Rochester, N. Y.; H. H. Tift, Tifton, Ga.; L. W. Penfield, Willoughby, O.



S. O. GOHO.

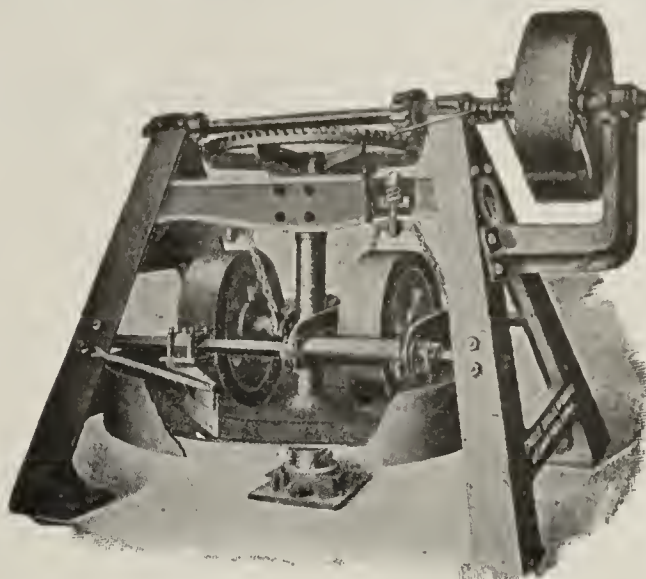
In re-electing S. O. Goho, salesmanager of the Hummelstown Brownstone Co., to the Presidency of the Sand-Lime Brick Association, the members of that organization showed not only a disposition, but a determination to hold on to what had proven good. When he was first selected for the office, in December, 1908, the Association was confronted with an indebtedness of \$1,500. In December, 1912 the balance was on the other side of the books, and the work accomplished by the Association had not suffered through any undue economy.

For the past three years the U. S. Bureau of Standards has sent a representative to the annual meetings of the Association and has made exhaustive tests in connection with the Sand-Lime product, proving and establishing authoritatively, its many claims to excellence and to consideration in connection with government, state and municipal work.

During Mr. Goho's administration, the Sand-Lime brick industry has prospered and the association is to be congratulated upon its good sense in keeping him in harness, working, at least part of the time, for the general good of the trade. In that part of his working day which he devotes to his own interests, Mr. Goho is salesmanager for the Hummelstone Brownstone Co., of Waltonville, Pa., the brownstone being a natural product of the quarries at Waltonville. The brick made by that company is only a side line, being made from the ground sand-stone spalls.

Mr. Goho's own side line is literary, he having edited and published several text books now in use in the school work of Pennsylvania.

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With independent and suspended mullers,
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Distinctive Points of Merit

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DESCRIPTIVE CATALOGUE ON REQUEST

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DES MOINES, IOWA



Chase Improved Flexible Bearing Folding Deck Dryer Car

See this car before placing your order.

We also manufacture a full line of Side Dump, Bottom Dump and General Purpose Cars, Transfer Cars, Turntables, Switches, etc.

The Chase Foundry & Mfg. Co., Columbus, O.

Write Us for list and discount on

Sawyers' Red Canvas Stitched Belt

The best belting made for Conveyors and Driving. We sell Rubber Belting, Packing, Hose and everything else in the rubber line.

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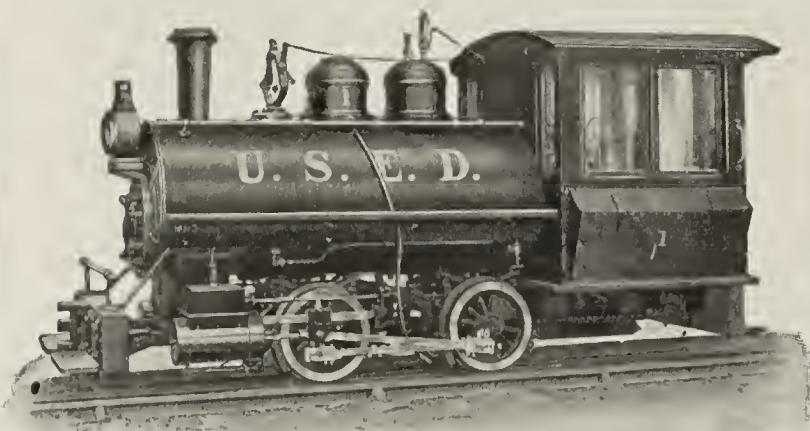
Chicago Rubber Co.

218 W. Madison St., Chicago

CLAY HAULAGE

Reduce costs of transportation by using a

Davenport Industrial Locomotive



Small Size—Reasonable Cost—Especially built for use of clay-products manufacturers', for hauling clay or shale from pits or mines to plant.

Cheaper Than Horse Transportation and will reduce costs of delivering your material to your plant, thus increasing profits.

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Seattle: 617 Western Ave. New York City, R. 2052 Grand Cen. Term. Bldg.
Canadian Representative: F. H. Hopkins & Co., Montreal, Que.

Machines and Equipment

In view of the approaching busy season it is important to consider ways and means for not only increasing loading capacity but saving expense at the same time. The past eight or ten years have proved that where yard conditions will permit, the Mathews Gravity Brick Conveyer is logical. We are informed by the Mathews Gravity Carrier Co. that the most gratifying indorsement comes to them from the trade—not only in the form of enthusiastic letters but in numerous additional orders from old customers. Some of the big manufacturers of Ohio, Pennsylvania and the South have added repeatedly to their gravity carrier equipment and some of them are now using many hundred feet. So popular has this method of handling brick become that it is quite customary for firms building new factories, or remodeling old ones, to write the Mathews Company for information as to the best way to lay out their plants and sidings so that the Mathews conveyers can be used to the best advantage. The Mathews Company is glad to perform this service without charge and stands ready to assist any member of the trade in bringing plants up-to-date so that 100 per cent efficiency can be secured in the handling end of the business.

During May, the following plants placed orders for the Mathews Gravity Carrier System: Westport Paving Brick Co., Baltimore, Md.; Merry Brothers, Augusta, Ga.; East Peoria Brick Co., Peoria, Ill.; Burke Brick Co., Fort Smith, Ark.; So. Zanesville, S. P. & B. Co., So. Zanesville, Ohio; Silica Products Co., Portage, Wis.; Hocking Valley Brick Co., Logan, Ohio; Wassall Brick Co., Glouster, Ohio; Barkwill Brick Co., Cleveland, Ohio; Omaha Clay Works, Omaha, Neb.; Pressley Campbell, Canton, Ohio; Sequin Vit. Pav. Co., Sequin, Tex.; Murray Roofing Tile Co.; Cloverport, Ky.; Purington Paving Brick Co., Galesburg, Ill.; James McCarron, Youngstown, Ohio; Nelsonville Brick & Tile Co., Nelsonville, Ohio; Borden Brick & Tile Co., Goldsboro, N. C.; John Kline Brick Co.; Wickliffe, Ohio; Athens Brick Co., Athens, Wis.; Fiske & Co., Inc., Boston, Mass.; Windsor Brick Co., Akron, Ohio, and U. S. Sewer Pipe Co., Annabelle, W. Va.

The Orenstein-Arthur Koppel Co. has given its agency for Canadian business to the Canadian Fairbanks-Morse Co., Ltd., with offices in Montreal, St. John, Ottawa, Toronto, Winnipeg, Saskatoon, Calgary, Vancouver and Victoria.

An attractive folder called "Over the Seas" has been received from the Dodge Manufacturing Co., of Mishawaka, Ind. It shows how "Dodge" goods are packed for foreign shipment and convinces the reader that this concern cannot be criticised, as are so many American manufacturers, for the bad condition in which exported goods arrive at their destination.

The Edgar Allen American Manganese Steel Co. has just issued Bulletin No. 52 dealing with "Komata Liners for Tube Mills," also a booklet on "Electric Special Ground Gears and Pinions." These are for general distribution to the trade and may be secured by addressing the company at its Chicago office.

The Stephens-Adamson Mfg. Co., of Aurora, Ill., recently installed a clay-storage and weathering system at the Ashland (Ky.) Fire Brick Co.'s plant. This concern had a very hard problem in their clay, which had to be seasoned for several weeks before it could be worked. On account of this fact, the company has provided an automatic storage system for piling several weeks' supply of clay and another system for withdrawing from the pile to the pans. Face brick plants that experience "unaccountable" difficulties in securing uniform burns will do well to look into the question of weathering—it may prove cheaper than delaying shipments or making allowances.

Trade Review

New York.

As the first half of June draws to a close it is apparent that bulls are frantically trying to rally an alleged sick market by raising the famine bugaboo. With only 34 cargo sales as against a normal 60 for the last week in May, the low record since the last panic year was reached and at the same time propaganda went forth to the effect that there was only 50,000,000 brick still available of the 1912 manufacture and that those who see their immediate future requirements at all clearly should enter the market at once for supply.

The actual facts in the case are these; there is at this date 49 left over bargeloads of fair to middling brick on the wholesale market as against 6 on even date last year. The sales from January 1st to date total 788 as against 724 arrivals, the difference between sales and arrivals being made up by an original hang-over in the market of left over barges on January 1st totaling 113. Last year at this time the total bargeload sales were 658 as against 589 arrivals with 71 hangovers on January 1, 1912.

With a total production for the Hudson river district for 1912 of 1,019,259,000 and recorded sales in this market for that year of 752,850,000 as of January 11, 1913, this would leave a balance of the 1912 production amounting to 266,309,000. This supply is divided at this date as follows:

In dealers' hands	35,000,000
In wholesaler market, unsold.....	17,150,000
Enroute to city on even date.....	1,400,000
In sheds between Yonkers and Mechanicsville.	161,709,000

Total available 216,259,000

This does not look much like a famine, but it is not a normal condition. The normal consumption of brick during June and July is between 75,000,000 and 80,000,000 a month so that by the first part of August when the new brick begins to come into the market in full quantities, there should be not more than 30,000,000 brick to hang over, which is considered a fair balance to take care of emergencies, etc.

There has been a great deal of complaint on the part of the manufacturers regarding the alleged slowness of the brick market this year. The figures, however, do not bear out this statement. The actual sales for this year from January 1st to date total 275,800,000 brick as against only 220,300,000 for a corresponding period last year. Most of the time the prices have been at least a shilling higher than those that prevailed a year ago and yet they say that business in the eastern brick market has been very, very bad.

As a matter of fact, the trouble is not so much with sales as with collections here in the East. The extent to which credit men are going to keep up their basis of collection would, at other times, drive business away from supply houses. But, as the saying goes, everybody is doing it and it is taken as a matter of routine. The other difference is that most of the sales this year, although showing up better than those of a corresponding period last year, are on hand-to-mouth orders and for that reason do not look large to the manufacturers who, accustomed to sell several bargeloads at a time to one dealer, now find accommodation riding the rule and part cargo sales not at all exceptional.

Wright D. Goss, president of the Empire Brick & Supply Company, manufacturers and distributors of a standard grade of Hudson river brick, gives this survey of the market and points out, very graphically why, in his opinion, business is depressed:

"Business in the building material markets of the metropolitan district is at the present time more or less unsatisfactory and inactive, but the condition is largely seasonal. Each year, at this time, a dull period is noticeable, when old work has been completed and new work is not fairly under way. This period is of longer duration and the condition is more pronounced this year than usual, owing to the fact that the weather during the past winter was exceptionally favorable for carrying structural work to completion. There was no interruption in the transporting or handling of building materials as is usual and there were but a few days when workmen were not employed in the building trades. Building operations that

The Rust Clay Feeder



This machine is one of the short cuts to profits in the clay product industry. Make your plant efficient by putting the Rust Clay Feeder to work. It saves \$500 in labor every year it is used. Don't you want to **save** that item?

Marion Machine, Foundry & Supply Co.
Box 395, Marion, Ind.

HOW TO ANALYZE CLAY

A Practical Work
for Practical Men

An aid to beginners and full instructions
for making clay analysis

64 Pages with Illustrations
By HOLDEM M. ASHBY

PRICE
\$1.00
POSTPAID

"BRICK AND CLAY RECORD"
445 PLYMOUTH COURT, CHICAGO

SECOND REASON WHY "NESTOR" IS UNEXCELLED FOR BRICK PLANT WORK

ALWAYS PLIABLE, FLEXIBLE,
NEVER BECOMES HARD
LIKE A BOARD

DO YOUR BELTS CONTAIN
THIS FEATURE?

The American Fabric Belting Co.
Cleveland, Ohio

under normal conditions would be active during the spring months were completed some weeks earlier than expected. The inactivity usually incident to the winter months is apparent in the increased spring dullness. Up to the present time I believe that the tariff agitation has not had any appreciable effect upon the building material business, but the prolonged discussion by congress of the tariff and financial legislation will doubtless have a disturbing effect upon all business. What is needed is some speedy decision regarding these matters so that business men everywhere may have some fixed chart to steer by.

It is local conditions that most intimately affect the building material markets. It has often been the case that when general business was lagging in the metropolitan district, building was most active. There are indications that within a short time there will be an increase in the demand for building supplies. Prices have held firm during the past few months in the principal articles. The difficulty experienced by manufacturers of both brick and cement in securing sufficient labor to properly equip and run their plants together with the increased cost of the necessary supplies is making for a higher cost of production. This will be reflected in the higher selling price of the finished products. Buyers have withheld the placing of their orders for building materials until actively needed, evidently expecting to find prices more favorable. This attitude I believe, will be found to be a mistake. Every indication is that if any change should take place in the prices of the principal building supplies such as brick, cement and lumber, it would be to a higher rather than a lower level. Investors and owners of real estate who wish to improve their properties, will wait for some time before a more favorable period comes, so far as supplies and labor conditions in the skilled trades are concerned."

Pittsburgh, Pa.

Gov. John K. Tener, of Pennsylvania has affixed his signature to the bill authorizing a Fifty Million Dollar bond issue amendment to the Constitution which will be submitted to the voters of the state at the general election Nov. 4 next. The money raised, if the amendment carries, will be devoted to the construction, repair and maintenance of state highways.

The business of the Davis-Price Foundry & Machine Co., at New Cumberland, W. Va., which went into bankruptcy some weeks ago, has been bought by Robert Francy, of Toronto, O., which is across the Ohio River from New Cumberland, the consideration being placed at \$22,000. The plant has never been idle, being operated by the trustee up until the time it was turned over to the new owner, who continues the business without interruption. It is possible that the name of the plant will be changed to that of the Enterprise Manufacturing Co., and operated under a West Virginia charter, which is to be procured. A feature of the business of this concern is the manufacturing of brick machinery.

Drilling for gas will be started immediately by the National Fireproofing Co., on its three thousand acre tract of land in the vicinity of Haydenville, O. Should gas be located, it is planned to use the product for fuel for burning purposes in the plants of the company in that locality. Recent developments in that vicinity have been successful, or sufficiently so to warrant the company to drill at least two test wells.

With its entire output contracted for, the Martel (Ohio) Clay Co. begins its career as a clayworking outfit under splendid auspices. Located at Martel, Marion Co., Ohio, at the intersection of the T. & O. C. and the Big Four Railways, the shipping facilities are excellent and with several large markets in easy reach, there should be no worry about the disposal of the output for many years to come. With ten acres of very fine clay, two 25 ft. kilns enclosed in a building 80 ft. square and 4 stories high, constructed of hollow block and brick made on the ground, and a product consisting of drain-tile, brick and hollow block, this promises to be a good investment for the men who have been responsible for its existence.

At a meeting of the Board of Directors of the Castanea Brick Co., the name of the company was changed to the Lock Haven Brick & Tile Co., and the following officers were elected: president, Charles H. Long, of Mill Hall, Pa.; vice president, Hon. George Kremer, Mayor of Lock Haven, Pa.;



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**Tubular Feed Water
Heater, Oil Separator
and Purifier**

is not an experiment but a tried and trusted appliance that the makers are not afraid to

GUARANTEE

To heat the feed water to the boiling point (210 to 212 degrees) with the exhaust steam without causing any back pressure, also to extract the oil from the exhaust, so that the exhaust steam after being passed through the heater can be used for other heating purposes, and the water of condensation for the heating system be returned to the boiler without the additional expense of an eliminator.

We are so sure of the OTIS that we agree to pay all cost of a trial—freight, cartage, piping, etc.—if it fails to do all we claim for it.

Catalogue and Prices at Your Service

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secretary-treasurer, F. C. Lucas, Lock Haven, Pa. The head offices will be maintained in Lock Haven, Pa.

Albert A. Moore, aged 58 years, for many years engaged in the manufacturing of common brick in the Pittsburgh, (Pa.) district, died June 7 at the home of his sister, Mrs. Harry F. Bossart, in Crafton, Pa., a Pittsburgh suburban town. He was the son of Albert Moore, a pioneer Pittsburgh brick manufacturer and when 21 years old was given an interest in the brick manufacturing business established by his father. He remained with this company until a few years ago, when he retired on account of ill health. He was a member of several prominent fraternal organizations and also of the Methodist Episcopal church. A brother and sister survive.

Texas.

A special committee of the legislature is investigating the financial and business condition of the state penitentiary system and will probably recommend that a large brick and tile factory be constructed on the Harlem state farm in Brazoria county. According to testimony which was given before the committee by men who are in close touch with the industrial needs of the penitentiaries a factory such as the one proposed would prove of great benefit. The state owns about 34,000 acres of land which lays in low country that is in need of drainage. It is planned that the tile which is to be manufactured shall be used to drain these lands. An investigation shows that a large deposit of clay of excellent quality for brick and tile purposes is located upon the Harlem farm. This same character of clay is being used by a large factory at Rosenberg, in the same section, for making rough tile and other clay products. If the factory is established it will be operated by convicts, and the brick it turns out will be used largely for erecting the new penitentiary buildings that are provided for in the recent legislative appropriation.

San Francisco, Cal.

J. Y. Parker, the enterprising manager of the Long Beach (Cal.) Brick Company, was recently host at the first of a series of fortnightly get-together meetings of the foremen and heads of departments of his concern. The meeting included an automobile trip into Los Angeles, with a banquet and theater party. Those present besides Mr. Parker were W. W. Wheatly, E. I. Starbuck, Marshall Gaige, A. Y. White, Harry Havner, Jack Cline, Gus Laffler, Geo. L. Parker, Wm. Parker and Robert Graham. The Long Island Brick Company recently opened a new office at 215 E. street, Long Beach, and has fitted the place up in such a way as to be a most effective advertisement of brick, everything about the place being built of clay products. Mr. Parker is keeping up a steady fire of the strongest kind of advertising to impress the public with the desirability of brick construction, and is probably doing more in this line than any other individual in California.

It is announced that residents of Banning, Cal., have made arrangements to start a brick manufacturing business just south of that place, and will commence burning this summer.

Under the supervision of the Oregon State Fair Board, the manufacture of brick has been resumed at the Oregon penitentiary, Salem, Ore. The plant was closed last fall, it was thought permanently, but the need for brick for state buildings has caused a change in the policy then announced. The first kiln was due to open about June 15.

The San Luis Brick Company, San Luis Obispo, Cal., turned out its first kiln for the season about May 15. The plant has been greatly improved, and a large run is anticipated through the summer.

Plans for the reorganization of the California Pressed Brick Company, which some years ago started a large plant near Niles, Cal., are said to be under consideration by Wm. Angus. It is reported that the plan is to take up all outstanding bonds, issuing stock in their place and, with a capitalization of \$125,000, lease the plant from the receiver.

Cleveland, Ohio.

After interviewing the heads of several representative plants in this city covering three important branches of the industry, it becomes a self-evident fact that brick manufacturers are enjoying a permanent boom seldom, if

To Prevent Scum Appearing on Your
Brick, Terra Cotta, Etc., Use

R. H. Precipitated Carbonate of Barytes

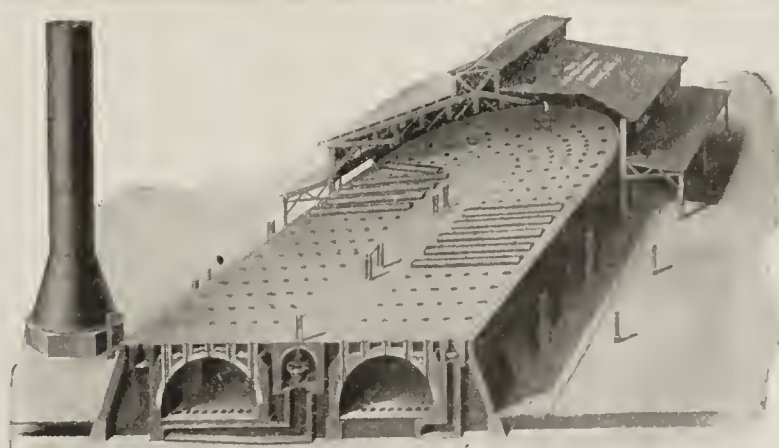
Literature on Application

Other High Grade Chemicals For
Clay Industries

The Roessler & Hasslacher
Chemical Company

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New York



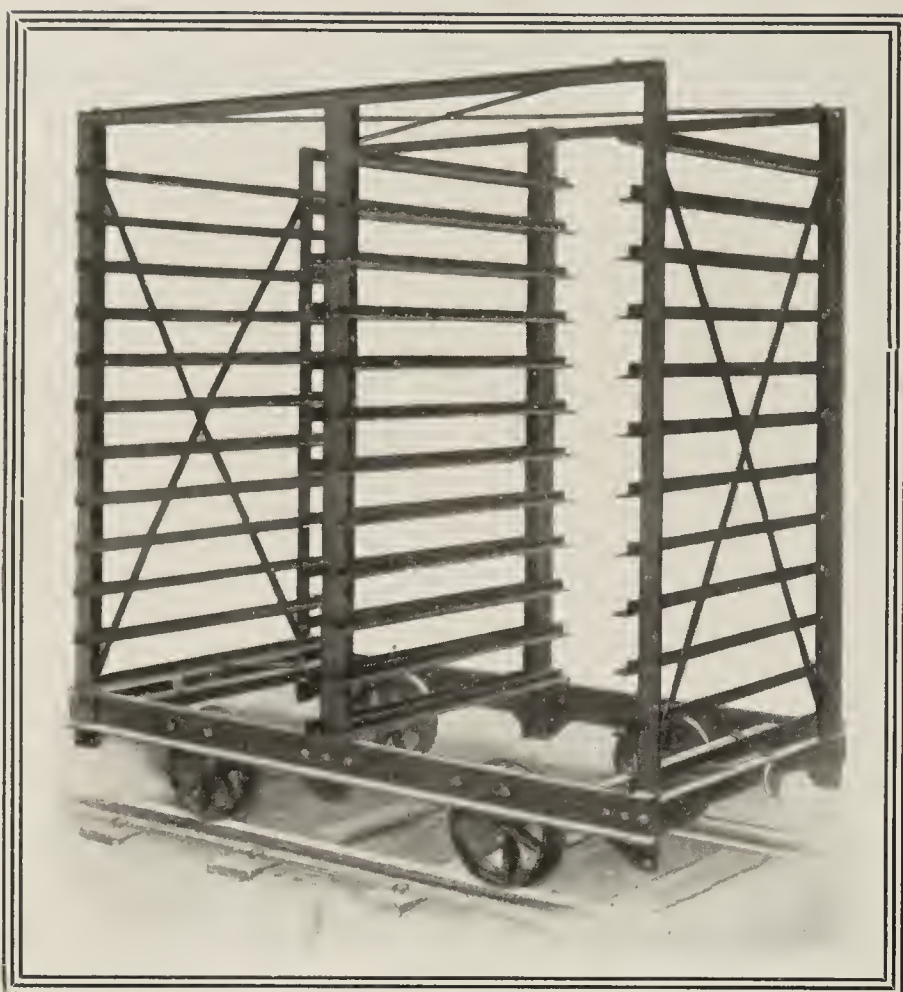
REGENERATIVE CONTINUOUS TUNNEL KILN

FOR

CLAY PRODUCTS

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Cleveland, Ohio



GERLOCK CARS are Never Skimped

The very best of material goes into the GERLOCK Car. The very best workmanship is put into the GERLOCK Car. We permit no skimping—we allow no substitution—we require our workmen to stick absolutely to the GERLOCK Specification. The result is the GERLOCK KNOWN QUALITY which is and must be the recognized standard.

All Our Products Have the Same Standard

We have striven and we have succeeded in making GERLOCK synonymous with Quality in everything we manufacture.

The same rigid specification of the GERLOCK Cars is maintained in our Steel Brick Moulds, in our Kiln Bands, in our Kiln Buckstays and Rods, in our Dumping Tables and in our Lime Mixers.

And in no one thing is this Quality Standard more necessary than in the Brick Mould. Because of the severe strain they have to stand, moulds wear out easily. Mould renewals every year in the average plant are no inconsequential item.

The GERLOCK All-Steel Moulds solve the problem. They cost but little more than wood and they outlast wood, being practically indestructible.

One of the largest and best equipped plants in the United States has installed GERLOCK equipment. The GERLOCK was not chosen until after a thorough investigation of all makes and it won because of the GERLOCK Known Quality.

Permit us to quote on your requirements before buying. It may mean the difference between Profit and Loss to you.

H. W. GERLOCK
HUNTINGDON, PA.

ever, equalled in the history of the industry in this territory. The only complaint heard is that they cannot secure enough labor to guarantee the rapid handling of material, and it would seem that this is the one big problem brick men are trying hard to solve.

Contrary to natural supposition, the recent floods have not stimulated brick shipments from Cleveland into those parts of Ohio affected; investigation brings to light the fact that flood sufferers who stood heavy property loss have not sufficiently recovered from the disaster to start the active work of reconstruction. When they do, Cleveland plants will undoubtedly furnish much of the material.

Mr. Frank M. Brady, secretary of the Cleveland Brick & Clay Co., says their production during April and May of the present year shows an increase of at least 15% as compared to a similar period in 1912. A new brick machine will be installed in this modern plant just as soon as the busy season starts to slack.

The installation of several pieces of new equipment at the Malvern and Carrollton plants of the Deckman-Duty Brick Co. have just been completed. At Malvern a modern electric lighting plant was installed while at Carrollton a cutter was installed and a new Thew automatic shovel was placed in the pit. The installation of this shovel is another example showing the study and interest brick manufacturers are taking in the economical handling of their raw material.

Mr. F. H. Chapin, vice-president and manager of the Hydraulic-Press Brick Co., in summing up the situation in this territory says, "If other manufacturers in this territory, who are engaged in the other branches of the industry enjoy as much prosperity at this time as do we, they will have no cause to complain unless it be a case of too much business. Our South Park (Ohio) plant and two others are at least five months behind in their orders and no let-up in sight. What little I have heard from the other plants in the territory indicate they are working under the same handicap."

If Cleveland can be taken as a fair example of the industry all over the country, then the brick manufacturer need have no fear of the profit and loss statement for nineteen-thirteen.

Columbus, Ohio.

Generally speaking, the brick business in all parts of the Buckeye state is active. Building in all of the cities and towns is leaning strongly toward brick, the lesson of the recent flood being the greater stability of brick. Railroads are able to handle brick shipments promptly and no car shortage is either threatened or expected for some time. Face-brick plants in the Hocking Valley are busy trying to accumulate enough stock to assure buyers of prompt service without depending on kiln shipments.

In the paving-brick field the activity is still more noticeable. Each year brings a larger percentage of brick-paved streets as compared to all other kinds of roads and the county commissioners are specifying, with greater frequency, the "dustless road" material, in preference to macadam.

Brick manufacturers and jobbers are interested in the agitation for the advance of freight rates in Association and Trunk Line territory. A meeting of some shippers with railroad traffic managers was held in the Chamber of Commerce building at Columbus, Ohio, recently and the question was discussed thoroughly. The consensus of opinion was that the railroads should be permitted to increase their rates on all classes of material, but that the rate increase should not be more than five per cent.

While no official action has been taken by either the American Face Brick Association or the Ohio Face Brick Manufacturers' Association, there is a feeling that brick shipments should not be made to stand any increase. In the past five years there have been two increases that have affected brick rates in the Ohio territory, and manufacturers in Ohio feel that, if an increase is to be made, it should not affect brick or similar clay products. About four years ago there was an advance in brick rates from this territory of one cent per hundred pounds. At that time the railroads sought to make an advance of five cents, but the Interstate Commerce Commission intervened and made the increase

comparatively small. Later on, under the guise of a readjustment of freight rates, advances were made in both Trunk Line and Association territory, which includes all of the roads east of the Mississippi River and north of the Ohio River, including the C. & O. railroad.

Louisville, Ky.

While the feeling of uncertainty that is beginning to pervade business circles in general, is making itself felt, to a certain extent, in the building trade, the men who are supplying material to contractors and builders in Louisville have not, as yet, found any serious cause for complaint. A number of structures that were started a short time ago, are going up according to schedule, while there seems a surety of other brick buildings being started in the near future. The prospects are, therefore, that a normal volume of business will be done this year, even though it may fall a little below the 1912 record. There is a feeling, though, among the business men of the Kentucky metropolis, that is bound to have its effect upon the real estate field. Two large buildings, scheduled to start this summer, will not be built for some time.

The Southern Brick & Tile Co., of Louisville, Ky., is working on a number of contracts, some large, that are to be filled within the coming month. One of these calls for 800,000 commons for the National Theatre at Fifth and Walnut Sts., which is all the new brick that will be required, the balance of the commons being old brick that were saved when the old building standing on the site, was torn down. While a little disappointment exists among Louisville brick men because of the decision to use a good part of the old brick, a feeling of pride is evident, as this is one of the most effective boosts for brick that has come up in a long time; a point has been made of the fact that, had the old structure been of concrete, nothing would have been saved that could be used again. Work on the new theatre, halted temporarily by the shortage of structural steel, is now progressing rapidly and Mr. Bishop's brick plant will be called on to deliver about as fast as the bricks can be taken from the kilns. Another contract that the Southern Brick & Tile Co., is filling is Levy Brothers' annex, which takes upwards of 400,000 commons.

There is some talk of reviving the old Brick Club, an organization which, at one time, included the most influential men connected with the building brick business in the state of Kentucky. All that is needed is for some influential member of the clayworking fraternity to assume leadership and the others will follow gladly. Everyone in the business recognizes the possibilities of the organization and know that it would help to bring Louisville "Back to Brick" as nothing else—but time—will.

Fully settled in its new quarters, the R. B. Tyler Company is pushing the sale of its various lines aggressively, Donald McDonald, Jr., being sales-manager. He is turning in contracts that make the "tight money and low tariff" talk sound like ghost stories. One of these was the Scheirich apartment, taking 150,000 Ohio Mining & Mfg. Co.'s brick and the Starks building, taking 350,000, part of which were from the Kittanning Brick & Fire Clay Co. Mr. McDonald is shortly to become a benedict, his engagement to Miss Juliette Barmore Avery of Louisville, Ky., having been announced recently. Miss Avery is a daughter of the late George C. Avery, formerly head of B. F. Avery & Sons, plow manufacturers.

Owen Tyler, the veteran brick dealer of Louisville, will provide the brick for the new engine house that is going up at 37th St. and Broadway, the brick selected being the South Park (Ohio) Cherry red. About 40,000 will be used, and in addition to this, the interior brick, green and white enamels, from the Hydraulic-Press Brick Co., were also sold through Mr. Tyler. The Puritan apartments, to be erected at 4th St. between Oak and Ormsby, will give Mr. Tyler another contract for 70,000 light red face brick.

A baseball league is being formed among employees of the Ashland (Ky.) Brick Company, each of the five plants operated by the corporation having organized a club to compete. Managers and captains have been elected and at least one game weekly will be played. Some expert players are included on the payroll of the company and the formation of the league has infused a spirit of good-natured rivalry into the men.

"Let the DEWEY Do Your Work"



The DEWEY is Cheaper than Mules

We have absolute proof that

the DEWEY is more economical than hauling by mules. Actual users of the DEWEY testify to this fact.

It runs on ANY track

Why stick to antiquated methods when you can get better service and at less cost? We invite correspondence on a "Show-you basis."

The DEWEY takes any Grade

The chain-drive makes it possible for the DEWEY to go into any clay pit and come out with a FULL load. No locomotive of the standard type of the same size and weight can pull near so large a load up a steep grade.

The simple construction of the DEWEY makes it possible for any ordinary help to handle it.

The exceptional light weight of the DEWEY makes it possible for it to run on ANY track—wood, iron or light steel.

The DEWEY boiler is designed for economical fuel consumption—for quick steaming and to lessen the evils of the ordinary boiler.

The price of the DEWEY is another one of its strong features. No other locomotive of the same capacity sells within several hundred dollars of the DEWEY.

\$1200

DEWEY BROS.
Goldsboro, N. C.

Williams Wet Clay Grinder

This is the **ONLY** machine that will **GRIND** clay and shale direct from the bank at **ALL** times **WITHOUT CHOKING UP**.



ALL ADJUSTMENTS PATENTED

The Williams is manufactured and licensed under ninety-seven separate and distinct patents.

The Only Machine of Its Character Made

The hammers are adjustable and the position of grinding plates may be changed at will while the mill is in motion. This is done by a hand wheel on outside of machine.

The Williams is thoroughly steam-jacketed both front and back, including the hopper, top and bottom of machine.

**We Can Work Any Clay
That Will Make Brick**

Write for Complete Clay Catalog No. 18 with List of Users and Endorsements.

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Patent Crusher & Pulverizer Co.**

Factory: **St. Louis, Mo.** 2701 No. Broadway

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The News in Brief

The Modesto (Cal.) Repressed Brick Co. reports satisfactory demand and good prices for its product. The Tully building on Tenth Street, Modesto, took over 200,000.

At the annual meeting of the directors of the Lambertville (N. J.) Pottery, the following officers were elected; president Andrew Foltz; vice president, Josiah Amisson; second vice-president, George W. Arnett; secretary, Cornelius Arnett; treasurer, Philip J. Faherty.

The Lake Superior Stone & Brick Co.'s yard has been reopened and is turning out 25,000 brick a day, under the direction of W. J. Wyckoff.

The plant of the Potomac Valley Pottery Co., at Cumberland, Md., which has been idle for a considerable time, has resumed operations. A number of Ohio pottery workers are now employed here, the plant being under the management of Charles Housenfeck, formerly of Tiffin, O.

East Liverpool pottery manufacturers have formed a rubber manufacturing corporation there, and have started the erection of a large plant near the site of the Smith-Phillips China Co.'s works.

Sanitary potteries, both in the east and the west, are doing a record business this season, all potteries making this class of ware, being operated to capacity. The two new sanitary potteries in East Liverpool, O., have a good volume of business on hand, and there is reason for believing that additional kiln capacity will soon be required by both firms. The Colonial Pottery Co. is now working two kilns sanitary, and the East Liverpool Sanitary Pottery Co. is working four kilns. A report is current that sanitary pottery will be made at Sebring, O., and preliminary investigations with this end in view have already been undertaken.

It is claimed that the Mount Union (Pa.) Silica Brick Co. manufactures and ships 300,000 bricks daily.

B. Mifflin Hood of Atlanta, Ga., will be one of a party of Atlanta business men who will go in a special train to Chattanooga, Tenn., to inspect the exhibit of the Chattanooga Manufacturers' Association, with the idea of adopting it as a model for an exhibition of a similar nature, which is being planned for Atlanta. More than \$250,000 has been raised in Atlanta to give the exhibition a good start and a sound financial standing.

Fifteen thousand pounds of brick machinery went to make up an express shipment which left the works of the C. W. Raymond Co., at Dayton, Ohio on May 29th. It was delivered at its destination point in Pennsylvania in eighteen hours after it was loaded in Dayton.

Wilbert Bros., of Plaquemine, La., will manage the brick yard that is to be reopened at New Roads, La., the early part of this month.

Reporting a splendidly increasing business and a steadily decreasing ability to keep up with orders, the Kentucky Pottery Co., Inc., of Dayton, Ky., is about to enlarge their plant. Their leading sellers are the Acme and St. Dennis cups and saucers.

A. F. Flock, consulting engineer, with offices in the Park Building, Pittsburgh, Pa., has awarded the Louisville (Ky.) Firebrick Co. the contract for furnishing all the firebrick and refractory stock which will be used in the construction of the large blast furnace that is being erected by the Rockdale (Tenn.) Iron Co. The draft stack will be 150 ft. high and 6 ft. in diameter.

Charles Herman, of the Herman Bros. Brick Co., of St. Joseph, Mo., died May 20th, after a short illness. He had been a brickmaker for 45 years.

A judgment for \$70,000 was obtained against Robert Nesch of Pittsburgh and E. C. Wright of Kansas City, Mo., by the receiver of the Kansas City Brick Co. in the Circuit Court of Kansas City, on June 3rd. The complainants showed that Mr. Nesch and Mr. Wright subscribed for stock in the company, which went into receivership in 1909 and subsequently refused to pay for it. The company has a plant at Sycamore, Kas., and another at Sugar Creek. Mr. Nesch is President of the Western Paving Brick Association.

The United Materials Company, San Francisco agents for the Los Angeles Pressed Brick Company, have taken some good orders for red Mission roof tile for Stanford University, Palo Alto, Cal. Deliveries have just been completed for the roof of the engineering building and tile is now being placed on the roof of the memorial chapel.

The Dover Brick Co., manufacturers of paving and common brick, which operates a plant near Strasburg, O., has plans ready for the erection of a new property at Canal Dover, O.

Paul Beer, manager of the Barber Asphalt Company's brick plant at Des Moines, Ia., has petitioned the city council to open the specifications for brick paving so that any standard make of brick may be used. He complains that the present city specifications of Des Moines shut out all but one kind of brick and so create a monopoly.

The Athens Firebrick and Tile company will erect a brick and tile plant at a cost of about \$200,000. The company owns a large bed of clay at Athens, Tex., and lignite for fuel exists in abundant quantities nearby.

The Marshall Brick company of Marshall, Tex., has increased its capital stock from \$20,000 to \$40,000.

The Sunset Brick and Tile company of Gonzales, Tex., which has been manufacturing brick for the last twenty-five years, reports that its business during the month of May exceeded that of any previous month in its history.

John R. Rollins of St. Louis, Mo., and associates are preparing to construct a plant at Mexia, Tex., for the manufacture of terra cotta. More than \$100,000 will be invested in the enterprise, it is stated.

Arrangements are being made to construct a brick and tile factory at Rosenberg, Tex., at a cost of about \$100,000. I. M. Staunton is interested.

More than \$5,000 has been spent for new machinery for the addition to the plant of the Bay City (Tex.) Brick & Tile Co. One round of the kilns has been made and the brick produced are meeting with general approval.

The E. A. Poe Brick Co., of Fayetteville, N. C., has a contract for 50 carloads of common brick to go to Aberdeen, N. C. The brick will be used in several buildings, all of which are being started this summer.

At the regular monthly meeting of the board of directors of the Harbison-Walker Refractories Co., held in the general offices of the company in the Farmers Bank Building, Pittsburgh, Pa., a dividend of one-half of one per cent was declared on the common stock July 2, to holders of record, May 20.

Intent upon choosing a residence with a hard-to-pronounce name, C. E. Carlson, late of Schenectady, N. Y., has moved to Saskatchewan. He will operate the sand-line plant of the Sand Stone Brick Co. at Prince Albert, Sask., and it is expected that, under his direction, the output of that plant will be greatly increased and improved.

Harold Penfield, assistant treasurer of the American Clay Machinery Co., seems to have qualified for a Carnegie hero medal during the recent Ohio flood, when, in a collapsible canoe, he rescued three men from the Sandusky river, at Bucyrus, Ohio. Mr. Penfield learned to handle a canoe at Cornell University, and this fact came to an unusually good purpose. A boat containing F. J. Barth, H. B. Sears and E. G. Reid capsized in the flooded Sandusky river, their position being made much more serious, through the swollen condition of the water and the amount of wreckage the swift current carried. The frail canvas canoe was not an ideal life-saving craft, but it served its purpose, aided by the skill of young Penfield.

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Gears

For

Brick and Clay Working Machinery

The severe conditions imposed upon machinery in the Brick and Clay Working Industry demand that gears be specially designed and cut from material that will give

Long Life

and

Reliable Operation

A thorough study has been made of the operating conditions to be met in the Brick and Clay Working Industry—and a correct gear to meet your most severe requirements can be supplied.

Let us know your requirements

Nuttall : Pittsburgh

The largest gear works in the world

We Will Construct and Equip Complete a Sand Lime Brick Plant

This means we will draw the plans, build the plant and furnish all the machinery and equipment.

This means we will superintend all the details and stick on the job from the day we break ground until we deliver the plant to you.

We'll Make 100,000 Merchantable Brick

This means we will actually make 100,000 or more brick and prove conclusively that we have done our work well.

We Do All This Under a Guarantee

This means we ask you to take no risk and that satisfactory results will be obtained—quality of brick assured and cost per 1,000 determined absolutely.

We make this unprecedented offer to any responsible person and invite full investigation.

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JACKSON & CHURCH CO.

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Designers and Builders of

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SAND LIME BRICK PLANTS

Beet Pulp Dryers and Presses, Dredging, Mining and Hoisting Machinery
Boilers, Tanks, Light and Heavy Forgings and Castings, etc., etc.

*The Toronto Brick Co., Ltd.,
write under date of Oct. 12th,
1912—*



TORONTO BRICK CO., LIMITED, TORONTO, ONT.—44,000 PER DAY CAPACITY

"On Sept. 30th we closed our year, and in starting on the new, would say that the two presses have been running continuously since they were purchased of you. Last year we made ten million brick and would have made more had we not closed down some time to install wet pans. The presses still are in as good condition as when installed seven years ago, and the record they have made is astonishing when compared to what other plants are doing. Our repairs last year were 15c per M, and we are so pleased with the results that you are at liberty to make use of this letter."



IT will be worth your while to investigate the merits of our line of dryer cars.

Glance at the cut and note the lines and construction of our new triple deck car with folding decks. This car will give the best possible service under the most trying conditions, never sagging or failing at critical times.

The folding deck feature is also a decided improvement over the old style deck.

If you want value received for every dollar's worth of outlay simply write for our prices and catalogue.

ELECTRIC LOCOMOTIVE & CAR CO.

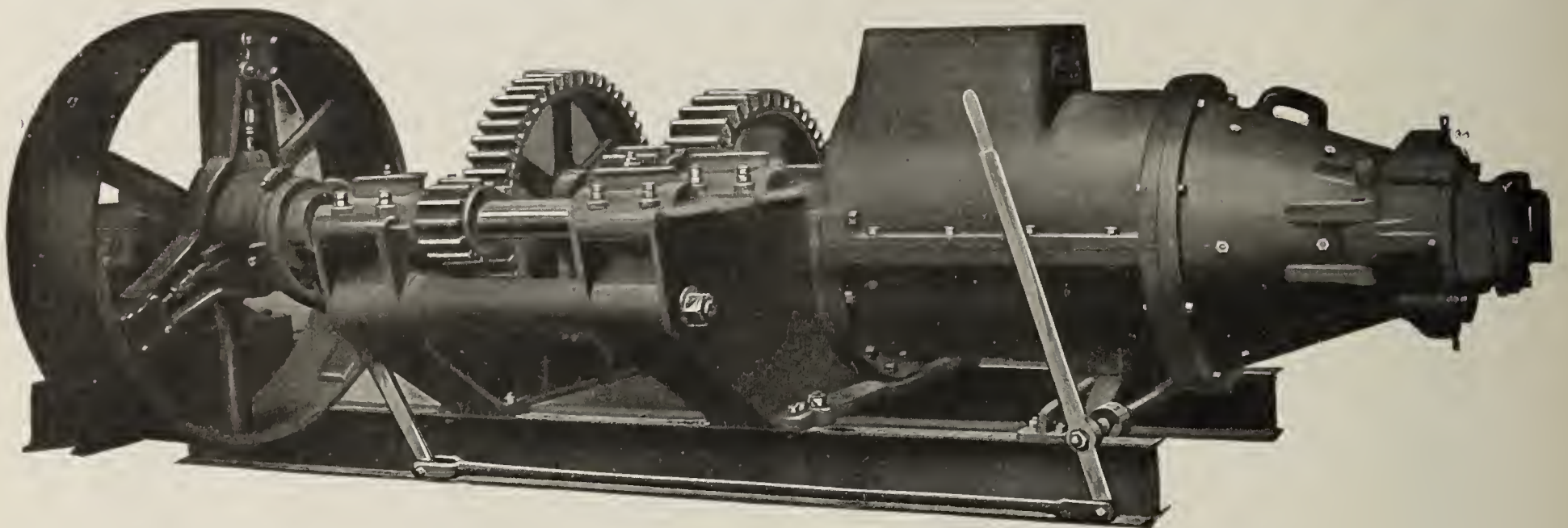
Successor to

The Industrial Car Co. and The Cleveland Car Co., West Park, Ohio

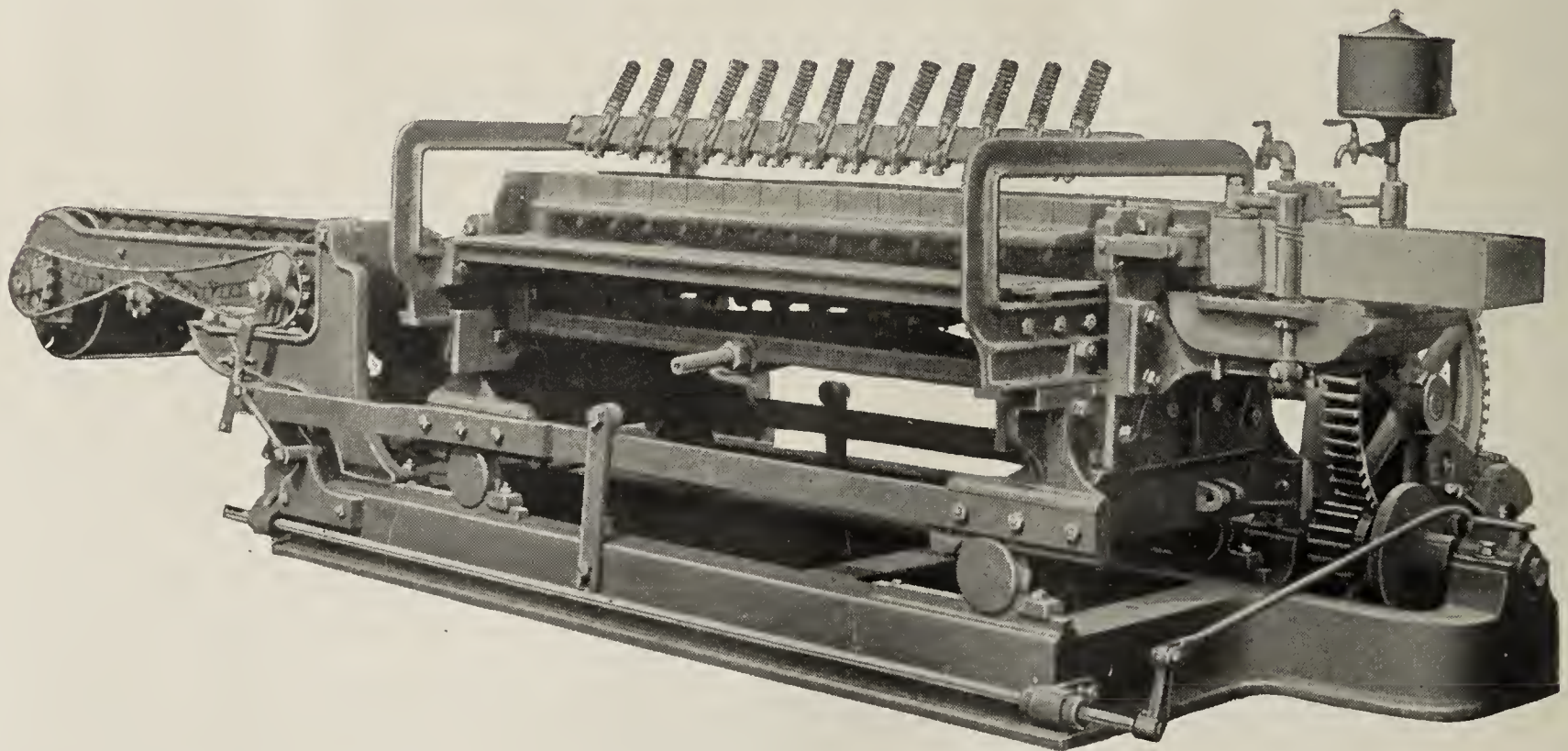
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An experience of over 20 years is back of BONNOT Machinery. There is no charge for that—but you get the benefit of it.



We build Auger Brick Machines in capacity from 20,000 to 125,000 daily output; combined Pug Mills and Brick Machines of the same capacity, automatic cutting tables having decided advantages. Also Dry Pans, Pug Mills, Represses, Screens, Etc.



Cuts brick within 18 inches of die.

No friction or other aggravations.

Capacity, 10,000 brick per hour.



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If You Want To Make Face Brick This Rotary Cutter Has Two Decided Advantages

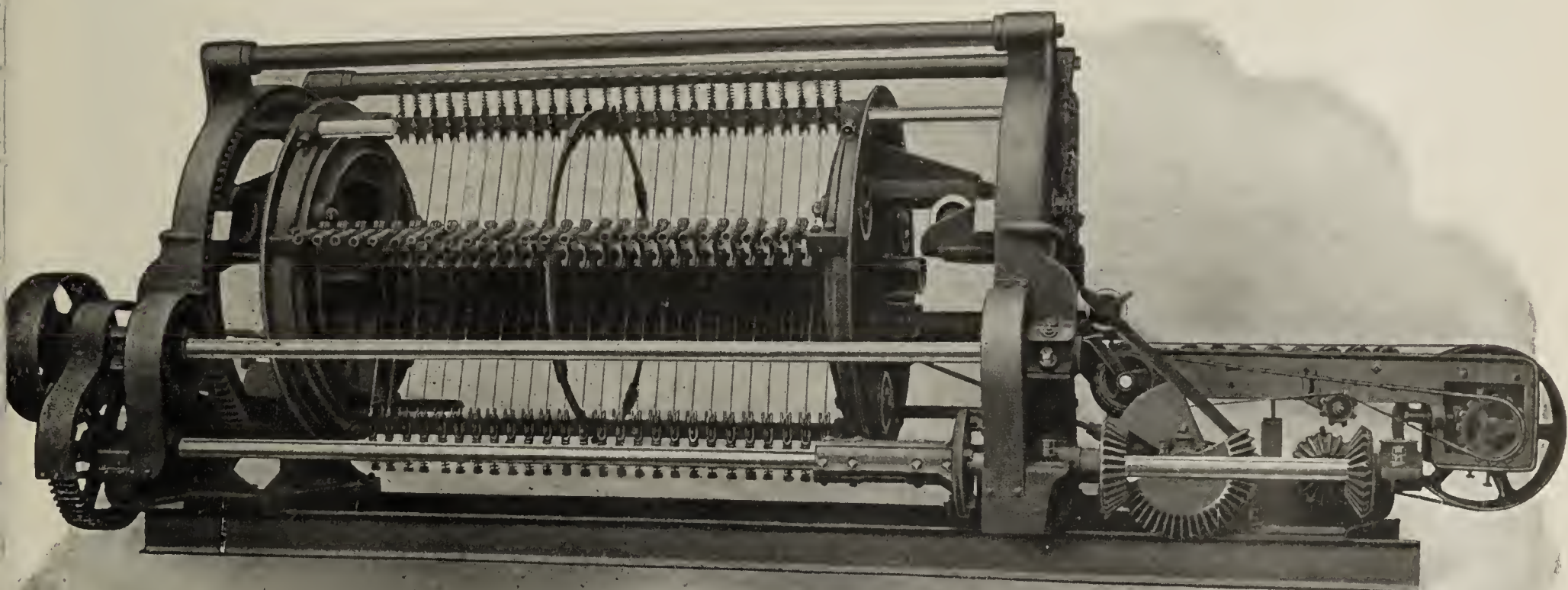


FIRST:

It cuts brick within 30 inches of the brick machine die so that there is no long bar of clay to push and swell your column or spoil the shape.

SECOND:

The center fastening for cutting wire is so placed as to give a shearing cut entirely through the column and not finish with a straight or vertical cut as some rotary cutters do.



ROTARY AUTOMATIC CUTTING TABLE

Especially adapted for making Face Brick. Capacity up to 10,000 Brick per hour.

Get our No. 20 Catalog just issued, describing a full line of brick machinery, Auger brick machines, Combined Pug Mill and Brick Machines, Automatic Cutting Tables, Repress, Dry Pans, Wet Pans, Pug Mills, Screens, Elevators, Cars, etc.



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Mention "BRICK AND CLAY RECORD" when writing to advertisers.

95,000 BRICK

IN 9 HOURS, 27 MINUTES

A world's record—We challenge comparison

In the May 1st issue we printed a letter from the Richmond Brick Co., New York City, regarding a record run made at their Greenridge plant of 86,688 *brick in 9 hours and 30 minutes*. This beat any previous record by a soft-mud machine, but now they have gone one better and *beaten themselves—95,000 brick in 9 hours, 27 minutes*.

RICHMOND BRICK CO.,

The Eastern Machinery Co.,
New Haven, Conn.

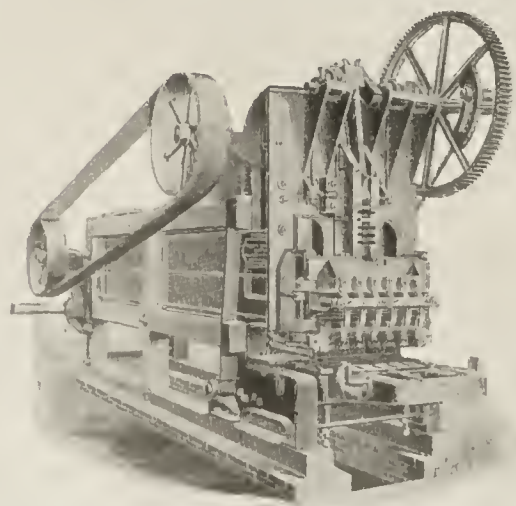
Greenridge, S. I., N. Y.,
May 21, 1913

Gentlemen:—

On Saturday, May 17th, we made 95 M. Bricks with one New Haven Soft Mud Machine. We started out in the morning with the intention of making 100 M. bricks in ten hours with one machine, but at 95 M. we ran out of cars. We turned out the 95 M bricks in 9 hrs. 27 min., actual running time. This, no doubt, is a world's record for one soft mud machine. We can repeat this performance any day in the week. It is just a matter of taking the bricks away from the machine as fast as it will make them.

Yours very truly,

RICHMOND BRICK CO.
C. STEADMAN, Supt.



The Machine that Makes the Profits

This concern has three of our machines and all of them have been in use for at least ten years.

Doesn't this emphasize our often repeated claims that the "New Haven" is built for durability, for economy, for speed?

The Eastern Machinery Co.

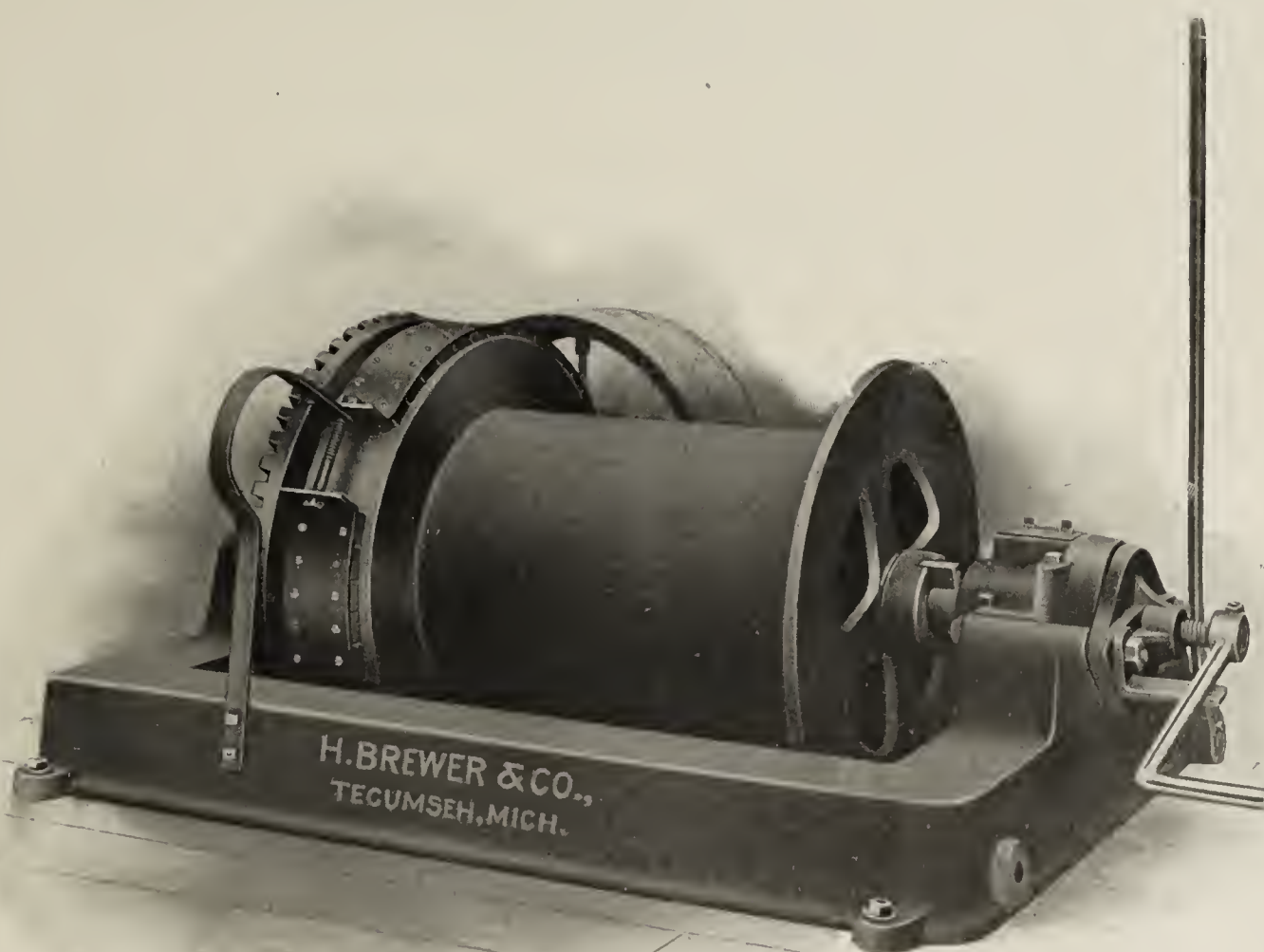
New Haven, Conn.

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HOISTS

You can buy a Brewer Hoist without buying trouble with it. It will keep on hoisting without any coaxing. We have spur-gear hoists, bevel-gear hoists, spur-friction hoists and bevel-friction hoists. Large ones and small ones and all of them **good**.



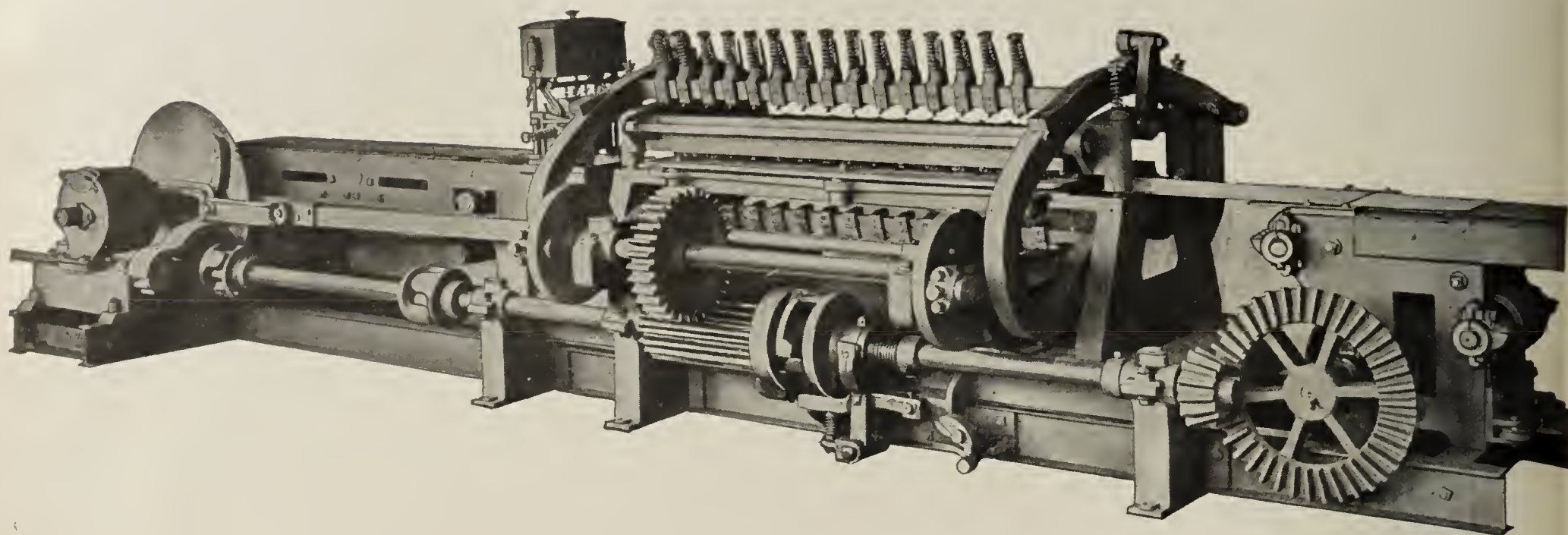
This is a Heavy Bevel-Gear Pattern

It is No. 28. It weighs 3,000 pounds. The drum is 20 in. diameter, 28 in. between flanges and the flanges are 30 in. diameter. The journals are self-oiling, the gears 4 in. face, the brake band 5 in. wide. Can be made right or left hand. Illustration above is left-hand. It is enough of a hoist for the biggest plants, and we have smaller ones for the others.

If you ask for our catalog you will get it

H. BREWER & COMPANY, Tecumseh, Mich.

Mention "BRICK AND CLAY RECORD" when writing to advertisers.



Model T 60 Reciprocating Automatic Cutter

This cutter, which is of the reciprocating type, is built in two Models "T 50" and "T 60" for capacities up to 15,000 brick per hour, or more. The design is extremely simple and substantial. It embodies many of the well tried features of our Rotating Automatic Cutters.

The cutting frame carries only one set of cutting wires, and has a swinging movement, avoiding the wear and play common to sliding parts. It is actuated by cranks, driven by a single gear and pinion, giving a smooth, quiet starting and stopping of the cutting stroke. The frame remains stationary between cuts, affording ample time to renew broken wires. The platens are very easily removed and replaced, when the thickness of cut is to be changed.

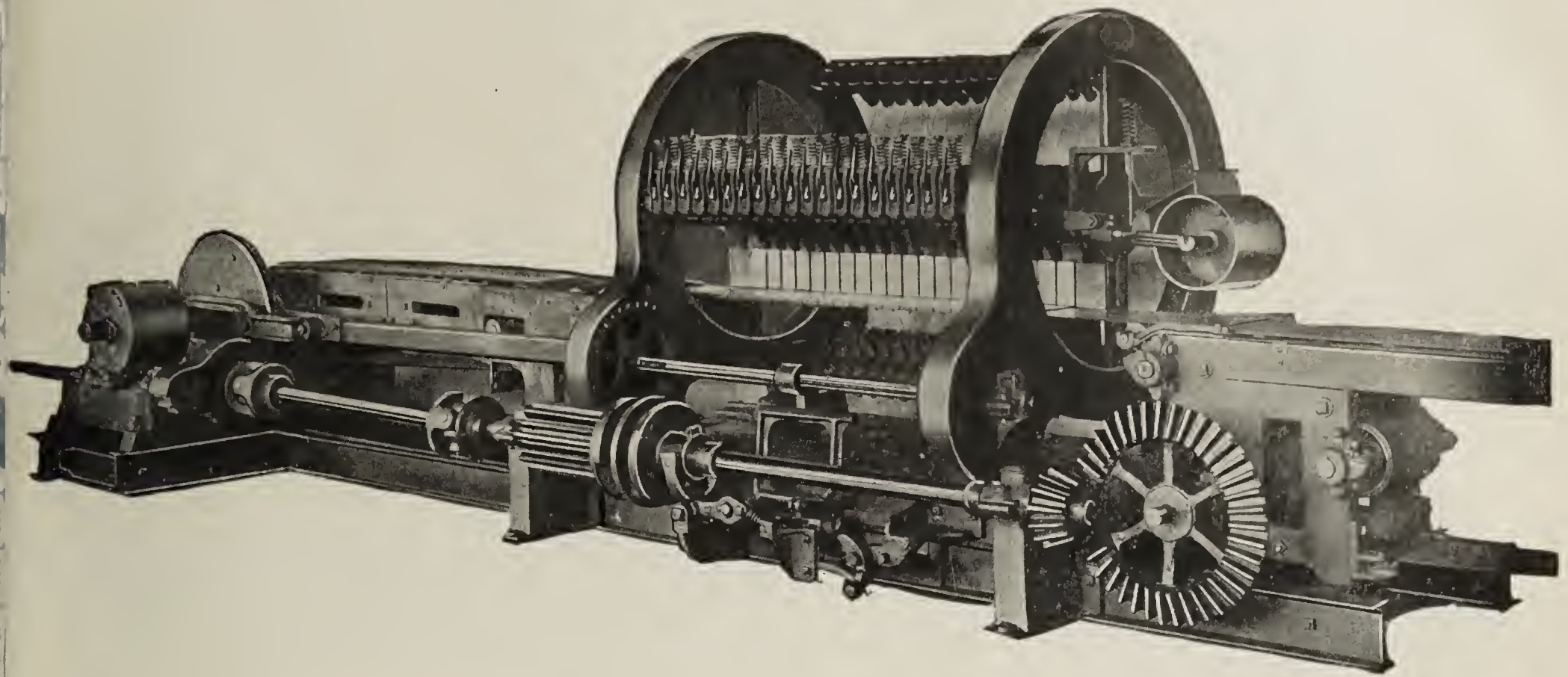
An upper platen (Dunn Patent) can be furnished to insure smooth upper edges on the brick. This is automatically raised to clear the clay column after the cut is completed, and is returned to position in time for the next cut, avoiding any tendency for the column to become wedged. Solves the problem of making smooth edge brick on a reciprocating cutter. Corners of the brick can be rounded without repressing.

Either Model is made to suit a variety of work. These cutters can also be especially arranged for cutting the Dunn Wire-Cut-Lug Paving Blocks. Many now in successful use for this work.

We are building a special Automatic Cutter for fire-proofing having novel and practical features.

E. M. FREESE & COMPANY, Galion, Ohio

Mention "BRICK AND CLAY RECORD" when writing to advertisers.



Model C 20

Rotating Automatic Cutter

We build rotating automatic cutters in various sizes and capacities. They are successfully used for solid brick of ordinary sizes, also for hollow ware, fireproofing, radial chimney blocks, etc., up to $13\frac{1}{2}$ in. by $7\frac{1}{2}$ in.

The above illustration shows the Model C 20 Cutter, which is an improved model of our well-known Size 16. It is intended for capacities up to 7,500 standard size brick per hour—18 brick are cut at each cut. At this speed the cutting reel makes only a little over two revolutions per minute, remaining stationary between cutting strokes. It is not necessary to stop the brick machine to renew broken wires, as this gives ample time. (Model C 30 is similar, but has larger capacity.)

The cutting apparatus, including drive for separating belt, is entirely self-contained, being mounted upon one set of I-beam sills, assuring permanent alignment of all parts. The measuring and separating tables are built with iron or steel sides.

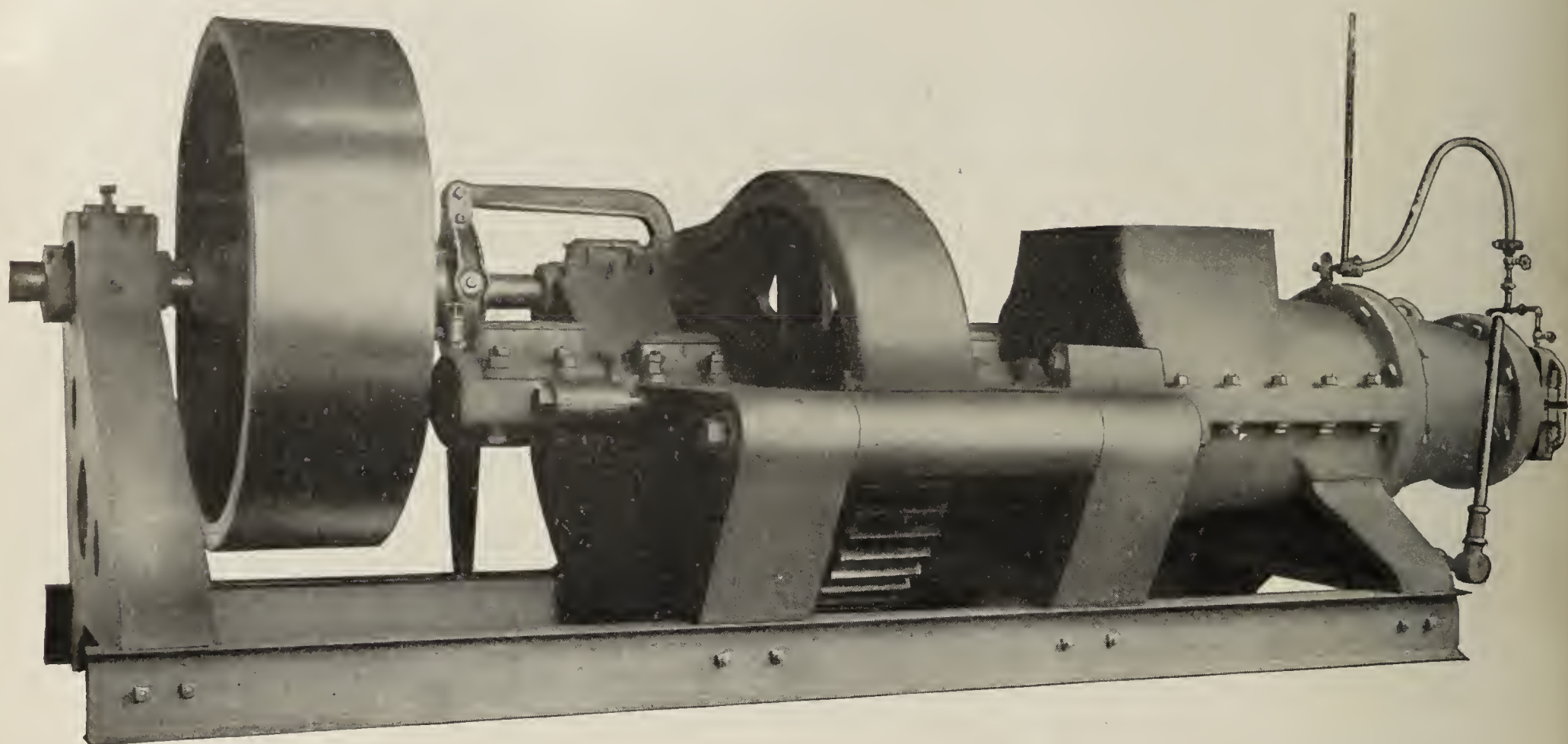
Cutting reel and carriage are carried on traveling rollers. No journal bearings used to support the weight. Carriage is positively moved with the clay by an accurate cam. Clutch mechanism is the simplest possible. Clutch jaws have renewable steel plates.

Wires are exactly held in position by holders of improved design, quick and convenient to operate.

Particular attention is called to the platen construction. The platen is cast in one piece of tubular cross section and is very rigid. Surfaces covered with renewable steel plates, insuring fine slots. The angle of the cutting wires has been changed to give perfect edges on the brick. Built to give long service without skilled attention. Complete description will be furnished on request.

E. M. FREESE & COMPANY, Galion, Ohio

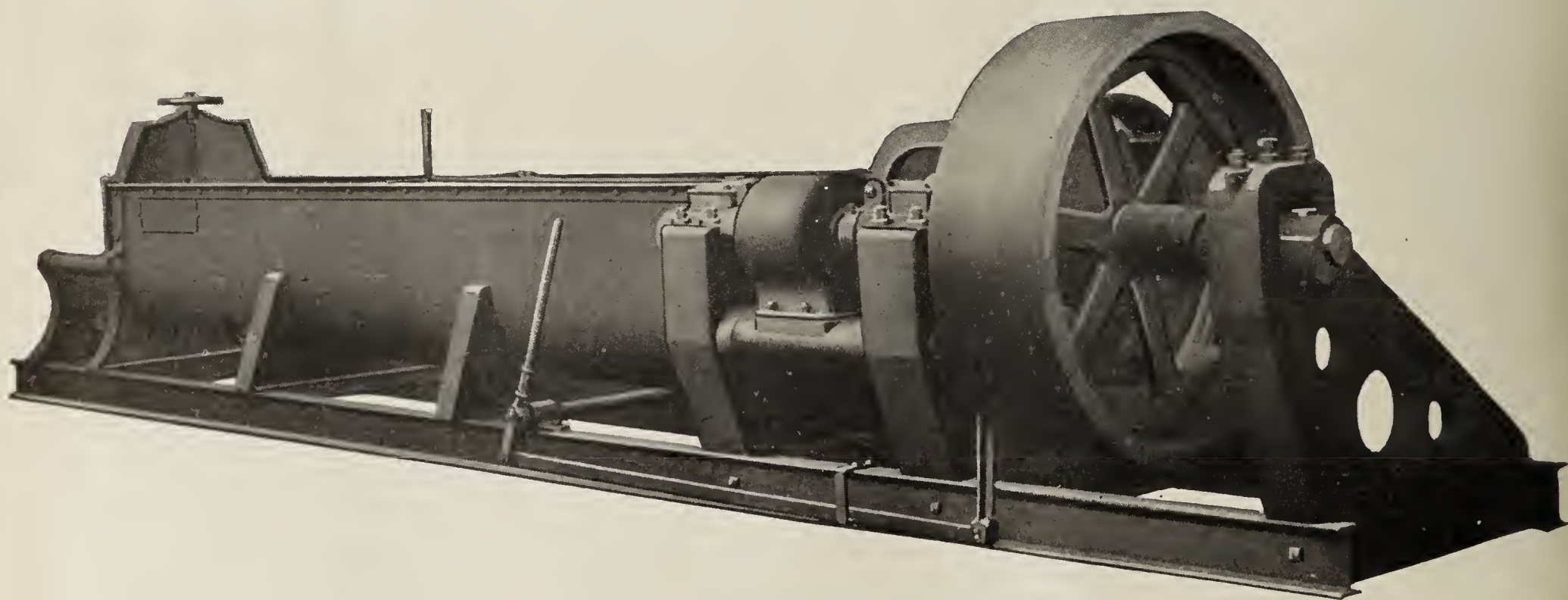
Mention "BRICK AND CLAY RECORD" when writing to advertisers.



Model "GC" Auger Brick Machine

For large capacity. Extremely simple in design. Convenient access to all parts. Massive proportions. Excellent material and workmanship. Gearing running in oil if specified.

Cut steel gears if specified. Special construction for fireproofing.

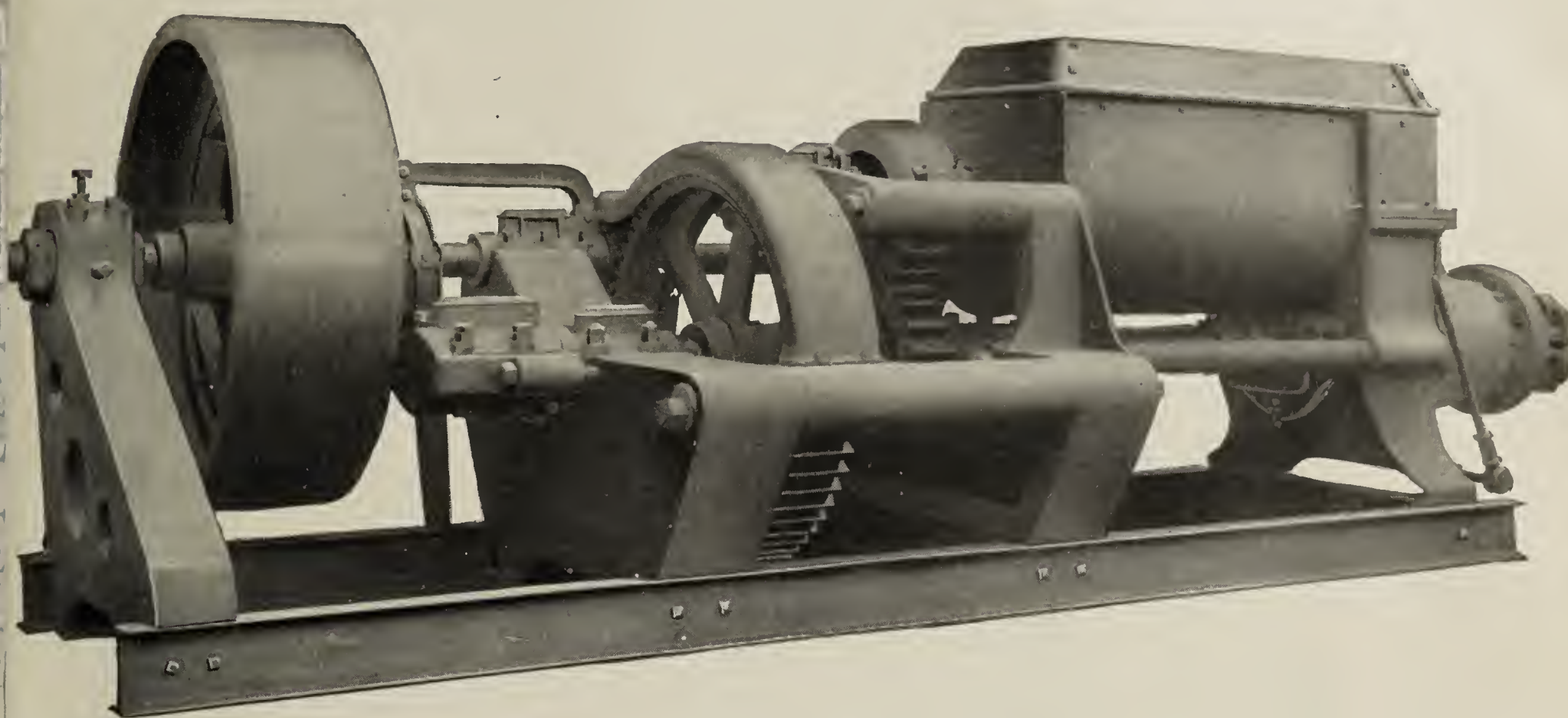


Model P-16 Heavy Duty Direct Gear Pug Mill

Large capacity. Hard steel pugging knives. Made to discharge as shown, or at gear end. Intended for thorough pugging and long service.

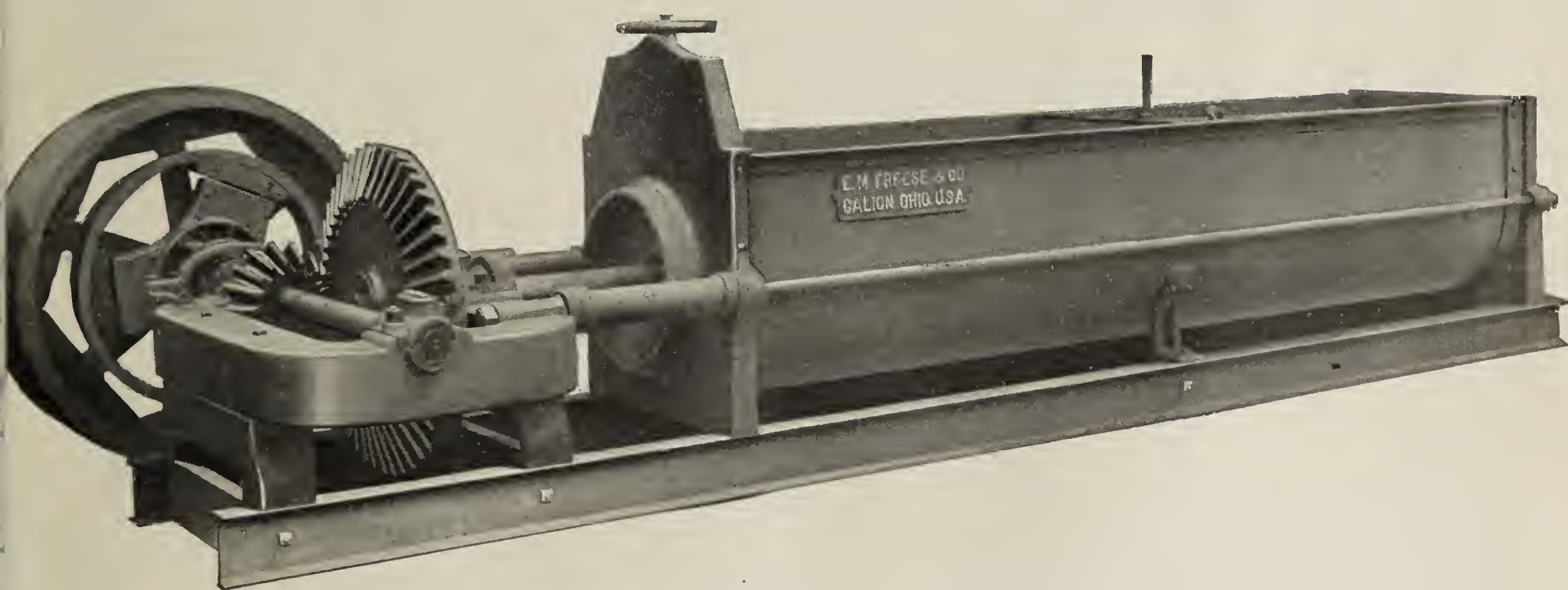
E. M. FREESE & COMPANY, Galion, Ohio

Mention "BRICK AND CLAY RECORD" when writing to advertisers.



Model "KC" Brick Machine

Late model. Important improvements. Construction simplified. Direct gear.
Gear running in oil, if specified. Can be modified to suit variety
of product. Will do first-class work.



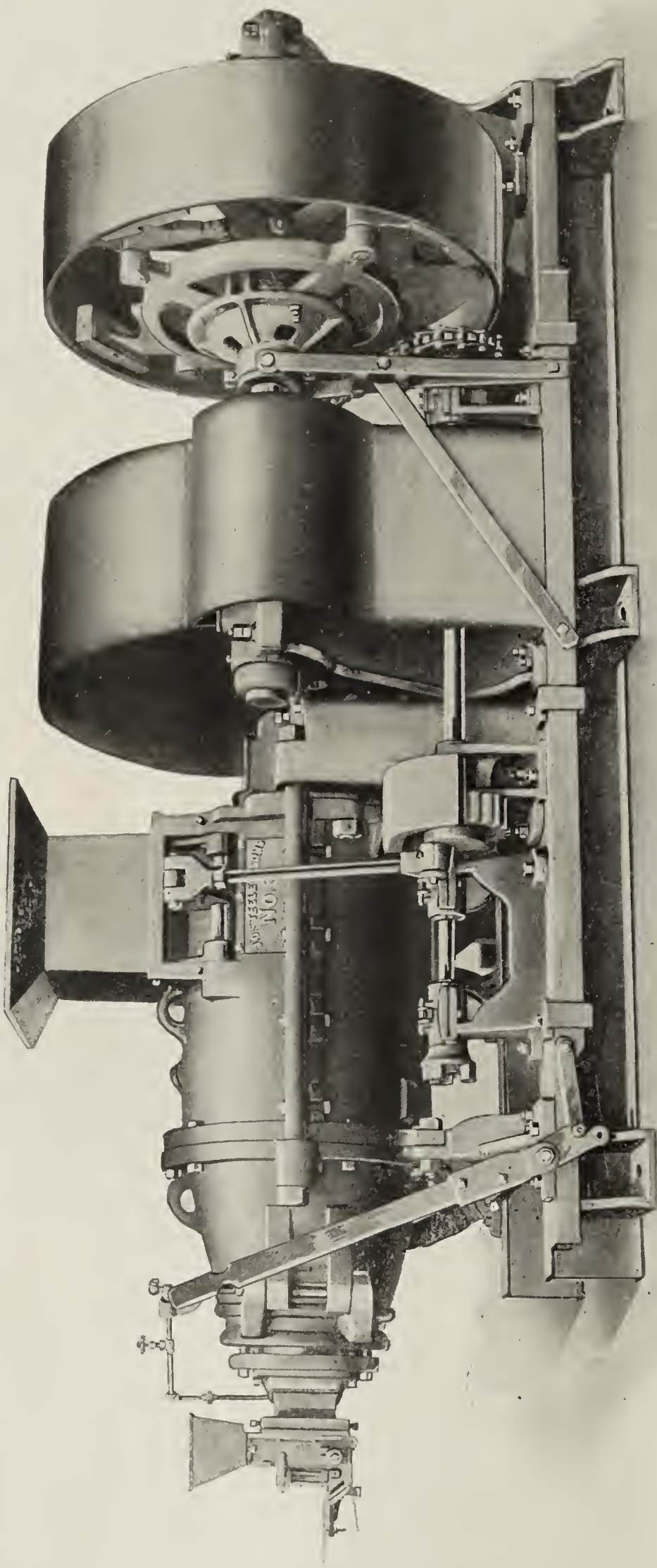
Model P-7 Bevel Gear Pug Mill, Gear End Discharge

We build high grade Pug Mills in many sizes, either spur or bevel gear, and
either gear end or front end discharge.

E. M. FREESE & COMPANY, Galion, Ohio

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

No. 6 Brick Machine, Capacity Fifty to One Hundred and Fifty Thousand



A brick machine of largest capacity with single gear driving mechanism of new and improved design.

Tested for hours at a speed of 45 r. p. m. of the auger shaft. Remember, engine speed and auger shaft speed are fixed speeds, and the less transmitting appliances between them, the less power required.

This machine has only two gears and four bearings—a reduction of three bearings, two gears and one shaft, as compared with most machines of large size.

The bearings are very large—from 4½ in. x 15 in. to 9 in. x 18 in.

The friction clutch pulley runs loose on a 7½ in. x 18 in. bearing.

The gears are very large, thereby reducing tooth load and side strain on bearings to a minimum; therefore reducing power required, wear and tear to a minimum.

Gears are cut; pinion being steel housed and run in oil bath.

Thrust bearing, of most improved design, in front of gear; less than

half frame. Outer end of auger shaft supported on out-board stand, thereby getting distance between bearings and again reducing side strain and friction.

Sills are very heavy "I" beams with heavy channel for side strain.

Machine can be taken to pieces without elevating any part; will run equally well in either direction.

Cutter driving mechanism entirely separated from more important wearing parts, and get any speed in either direction.

Standard auger shaft for brick made of steel, 9½ in. in diameter, with inserted, adjustable steel knives, and renewable wearing surface or shell. Also equipped with a system of continuous augers and bushings, telescoping mouthpiece, etc., for any kind of hollow ware. In this case, the shell is left off and knives fit over shaft.

A close examination will reveal many interesting points that we have not space to mention.

J. C. STEELE & SONS, Statesville, N. C.

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

The opinion of others should carry some weight with you

We are proud of our Classified Ad Department and after reading the following letters, you will understand why.

■ ■ ■ ■

Charlotte, N. C., 12-28-12.

"If anyone thinks that your magazine does not cover the country let him place an ad therein. We got so many answers that we had to reply with circular letters. Our position is filled, and, we think we have the right man for the place. Wishing you the most prosperous of all years, we are, yours truly,

Carson Brick Co.

"(Signed) J. E. Carson."

.....

Scranton, N. D., 3-1-13.

"Please cut out enclosed ad. Have all kinds of satisfactory answers. Yours truly,

"Wm. J. Simms."

.....

Colorado Springs, Colo., 2-22-13

"Please do not put my ad in 'Brick' again as I have sold all my machinery except the engine. * * * I may want the engine advertised again, will let you know shortly. Thanking you for quick returns. Yours very truly,

"Henry W. Stonger."

■ ■ ■ ■

The above are only a few of the many complimentary letters we have received.

Why not try an ad and get rid of that second-hand machinery around your plant? The rate is only eight cents per word for the first insertion and six cents per word for each additional insertion. Send in your order now for the next issue.

BRICK AND CLAY RECORD

445 Plymouth Court

CHICAGO, ILL.

Des Moines, Ia., 2-17-13.

"On December 26, 1912, we gave you a 'for sale ad' and asked you to please run it in your January, February and March editions. As we have all the answers we can handle, we ask that you please discontinue the ad at once, and oblige, Yours truly,

The Barber Asphalt Co.,

"(Signed) W. J. Ball."

.....

Milton, Ia., 2-16-13.

"On January 15th we put a small ad in your classified columns, and by the 20th began to get inquiries. We received letters from all parts of the country—New York in the east, California in the west, Mississippi in the south, and Winnipeg in the north. We have received, and are still receiving, a flood of letters. We have sold one full carload of machinery to Illinois parties, a carload to a Nebraska party, another to Omaha parties, one to Arizona parties, besides small press shipped by local freight. In fact, we have pretty well cleaned up our two plants. * * * We were very agreeably surprised at the results.

"Yours truly,

Baird & Haney."

Brick Classified Department

A BARGAIN COUNTER OF

For Sale and Want Advertising

"Brick and Clay Record" Ads are Result Producers. Cash must accompany all orders.
Rates: Eight cents per word for first insertion; six cents per word for additional insertions. Minimum charge of \$1.00 per insertion. If cuts or display type is used, a rate of \$3.25 per inch will be charged.

Opportunities to Purchase or Lease Clayworking Plants Cheap

BRICK YARD FOR SALE.

On Hudson River.

Seventy acres land; 3-machine yard; inexhaustible supply of excellent clay and sand; extensive river front; easy terms. Address: 6-E, care of this paper. 6-2

For Sale.

Half or all. A very good chance for some one to get into a good business. Address: 5-BF, care of this paper. 5-2-3P.

For Sale.

Brick plant situated in northern part of Minnesota, capacity 40,000 brick per day, close to Duluth and Superior. Best of clay for sand mold and hollow brick; big demand for brick. Snap for practical brick man. Good reason for selling. Address: 6-G, care of this paper. 6-3-P

For Sale.

Half interest and management if desired, in well established brick and tile plant in Wisconsin city of 15,000. Lots of clay, face of bank 60 ft., perfect drainage, little top soil, sand bank adjoins. Burns 75 per cent select rich cream color brick that meet Government requirements. Tile of the best. Coal distributing point. Market by water and two railroads. Prosperous and growing trade. Cheapest place to manufacture in the state. Must build larger. Owners have other business. Address: Industrial Dept., Soo Ry., Minneapolis, Minn. 6-3

Never Before—

Such an opportunity to get into the brick business, where big money can be made.

The only strictly modern common brick plant in our city of 500,000 (where brick is the scarcest building commodity) is for sale at a big sacrifice. 25 acres of clay. Arnold-Creager machinery for 35,000 daily. Operated by electricity. Three times the output can be sold annually and all delivered on wagons from the kilns. Sell on yard for \$7.00 per M., produced for \$3.50 per M. About \$15,000.00 will swing the deal. Some capital can be raised locally. Wire: my expense. J. B. Varleman, Lockland, P. O., Cincinnati, Ohio. 6-2

For Sale.

Whole or part interest in modern brick and tile plant. Santa Fe, I. C. R. R.'s spur at yard. Sell all output. Goodwin Bros., Minonk, Ill. 6-2-1

For Sale.

One brick plant ready to operate under favorable conditions. Must be sold. Inquire of or correspond with John E. Nickerson, Lewiston, Idaho, for particulars. 6-2-P

Brick Yard for Sale.

Equipped with continuous kiln, capacity 160,000; 2 down-draft kilns, capacity 40,000 each; stack draft 100 ft. high. Pallet drying system, 13 dryers; yard capacity, 260,000. Stiff-mud and soft-mud brick machines; Taylor & Chandler 25 h. p. engine and 75 h. p. Porter boiler. Two residences on yard, 1 dining room, 1 bunk house with other buildings and all tools necessary to operate yard. Plenty of clay. Quick sales for all the brick that can be made. Spur railroad track into the yard. Will be sold at a bargain. For terms inquire of W. E. Taylor, Cashier, Madison, Neb. 5-2-6

HELP WANTED

Wanted.

A going stoneware pottery concern wants to add specialties to its line, and wishes to correspond with party who is thoroughly practical in the manufacturing of that line. Reference and experience with inquiry. Address: Hawthorn Pottery Co., Hawthorn, Pa. 6-2-1

First-Class Machinist Wanted.

One who thoroughly understands dry press brick machinery, and knows when brick are properly made. Practical man wanted—no student, nor booze fighter, need apply. Atlas Press Brick Works, Dallas, Tex. 6-2-2-P

Wanted.

Burner for paving brick plant in the south, using negro labor. Must be A-1 burner, sober, and furnish references. None other need apply, as our superintendent is a burner also. State experience and salary expected. Address: 6-B, care of this paper. 6-TF

Wanted.

A few experienced fire brick molders and setters. Good wages and steady work guaranteed. Address: 6-BF, care of this paper. 6-2-TF

Wanted.

Superintendent for paving brick plant in Cleveland, one who can invest \$5,000. Address: Brooklyn Brick Co., 1976 East 81st St., Cleveland, O. 6-2-1P

Wanted.

Brick burner for common brick. Raymond gas fired continuous kiln. In answering state age, experience and wages expected, with full information. J. L. Barringer, Florence, S. C. 6-2-1

Competent Superintendent Wanted.

For paving brick plant. Good salary. Must be thoroughly sober, reliable, able to handle men and machinery, and produce proper results. Give experience and references. Address: 6-BA, care of this paper. 6-2-1

MISCELLANEOUS

Wanted.

All Steam Users to do without using any kind of compounds or chemicals and still have clean boilers. Write "Otis," No. 390 Norfolk Ave., Buffalo, N. Y.

Clay Prospector.

Don't take a chance. Have your clay prospected and tested by an experienced man. It is worth something to know you have the proper material and plenty of it. For particulars address: 6-H, care of this paper. 6-2

Are Your Freight Rates Satisfactory?

Did it ever occur to you that your competitors in many instances have rates that are predicated upon a more equitable basis due entirely to the aggressiveness of expert traffic men.

We have in our employ men who thoroughly understand these vexatious traffic problems and are prepared to assist you in every possible manner.

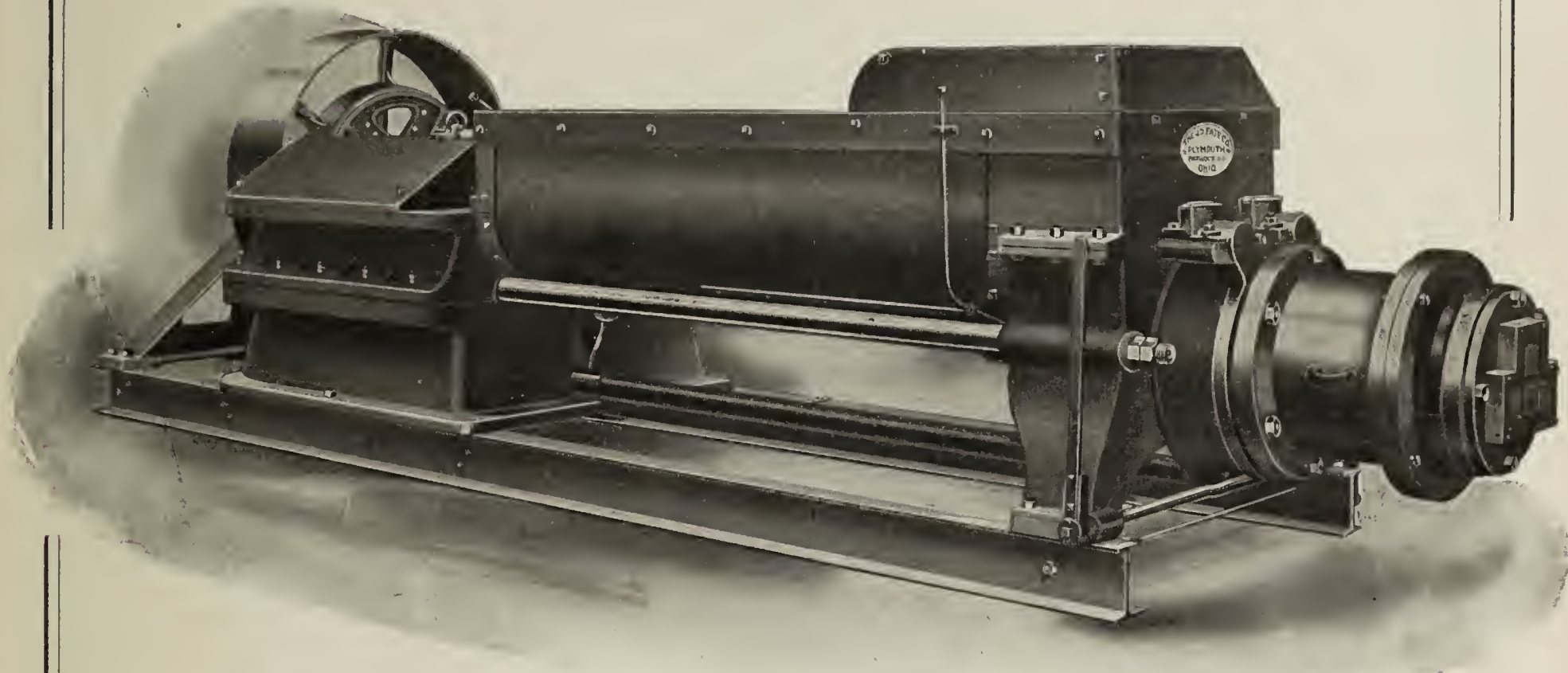
Results Produced or No Charge.

General Traffic Association, Inc., 715 14th St., N. W., Washington, D. C. 3-1

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The Fate Quality

Quality hinges on two things—mechanical perfection and the best of material. These factors enter into the product of the House of Fate.



SPECIAL PREMIER HOLLOW WARE MACHINE

It is useless for any one to look farther for a better Hollow Ware Machine, nor even for one that will approach it. This is the machine that eventually all producers of Hollow Ware will use. Five of them have been sold at Brazil, Indiana, alone—the greatest Hollow Ware point in the country. Soon all the conduit, hollow blocks, silo blocks and drain tile made in this great clay center will be made on this machine. Does this mean anything to you? Ask us to tell you all about it.

The J. D. Fate Company

Plymouth, Ohio

Western Office, 604 Blake-McFall Bldg., Portland, Ore., A. E. Davidson

Eastern Office: 50 Church Street, New York City, Jas. A. Ridgeway, Representative

Manufacturers Equipment Co., Dayton, Ohio, Sales Agents

The Justice Radiated Heat Dryer—Successful Results Always Certain

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CLASSIFIED DEPARTMENT

Tile and Brick-Making Equipment Machinery and Supplies

For Sale.

Good brickyard outfit of machinery for sale cheap. About 60 miles from New Orleans, La. Genesee Lumber Co., Genesee, La. 6-TF

For Sale.

One Berg 4-mold dry brick press; splendid condition; rebushed in bronze; great bargain. Address Greenville Lumber Co., Greenville, Bond Co., Ill. 3-1tf

For Sale.

One Boyd and one Berg Dry Press, at a bargain. One No. 0 and one No. 1 Thew, whorly, traction, Steam Shovels in fine order at reasonable price. Two Flower Pot Machines, good as new. C. H. Horton Co., Painesville, O. 6-2-P

REVOLVING STEAM SHOVEL FOR SALE

27 ton, $\frac{3}{4}$ yd. MARION "Model 30" Revolving on traction wheels. New 1910. Can be had right. Others to suit your requirements.

WM. B. GRIMSHAW CO., 
688 Drexel Bldg., Philadelphia, Pa.

For Sale.

One No. 3 Potts disintegrator in first-class condition. Address: Straight Bros., Spencer, Iowa. 6-2-3

For Sale.

4-mold American dry press machine, practically new. The Coffeyville Shale Brick Co., Coffeyville, Kan. 6-2-2P

For Sale.

One 4-mold Penfield dry press in good condition. Address Hydraulic-Press Brick Co., 403 Rialto Bldg., Kansas City, Mo. 3-1tf

For Sale.

Boyd 6-mold dry press, Grath 1-mold hand press. Both in good condition. Disintegrator good as new. P. M. Johnston Brick Works, St. Elmo, Ill. 5-2-P

For Sale.

One iron Quaker brick machine. Only used to make about 20,000 brick; works all right. Will sell cheap to quick buyer. Can use horse or steam. Address: 6-D, care of this paper. 6-TF

Brick Machinery For Sale.

125 h. p. boiler, dry pan, 100 h. p. engine, one single die repress, Freese combination brick machine and pugmill, Freese automatic cutter, hand cutter, shafting and pulleys. J. P. Vogan, Franklin, Pa. 4-2-TF

For Sale.

Complete outfit of machinery for a 40,000 capacity sand-lime brick plant. All in good condition. Will sell any part you may want. Address: Iowa Granite Brick Co., Clinton, Ia. 6-2-1

For Sale.

We have for sale at Kokomo, Ind., one 4-mold Berg brick press, with necessary molds as follows: $8\frac{1}{2} \times 4\frac{1}{4} \times 2\frac{1}{2}$ inches, and $9 \times 4\frac{1}{2} \times 2\frac{1}{4}$ inches. Machine used but very little, and almost as good as new, but not latest pattern. Address: 6-BB, care of this paper. 6-2-2

Steel Rails

All sections, New and Relaying. In stock for immediate shipment. Second-hand rails cut to any length desired for all purposes.

M. K. Frank, Pittsburg, Pa.

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Established 1895.

HUBERT E. PECK, Patent Attorney
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Increase Your Profits

by making

SEWER PIPE.

OUR BOOKLET

"Sewer Pipe and How to Make It"

contains thirty-eight pages, giving in detail the process of Sewer Pipe Manufacture. It is divided into two parts: Part I dealing with the American practice; part II with the English.

SENT ON RECEIPT OF PRICE, 25 CENTS.

BRICK AND CLAY RECORD.

445 Plymouth Court,

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Sell Your Brick We'll Write Your Ads

Ad writing is brain racking work. It takes time, thought and energy. Let the other fellow do it.

Spend \$5.00

for

"Ads that Will Sell Brick"

Written by an expert ad writer. 19 pages splendid reading articles accompany the ads.

Brick and Clay Record

445 Plymouth Court

Chicago, Ill.

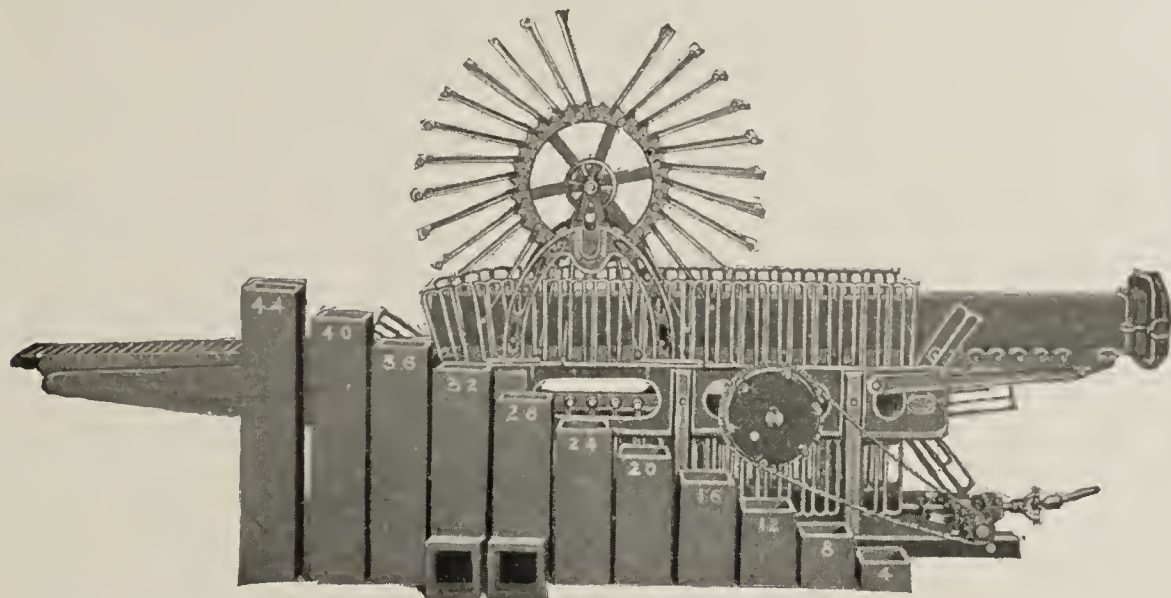
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The Fate

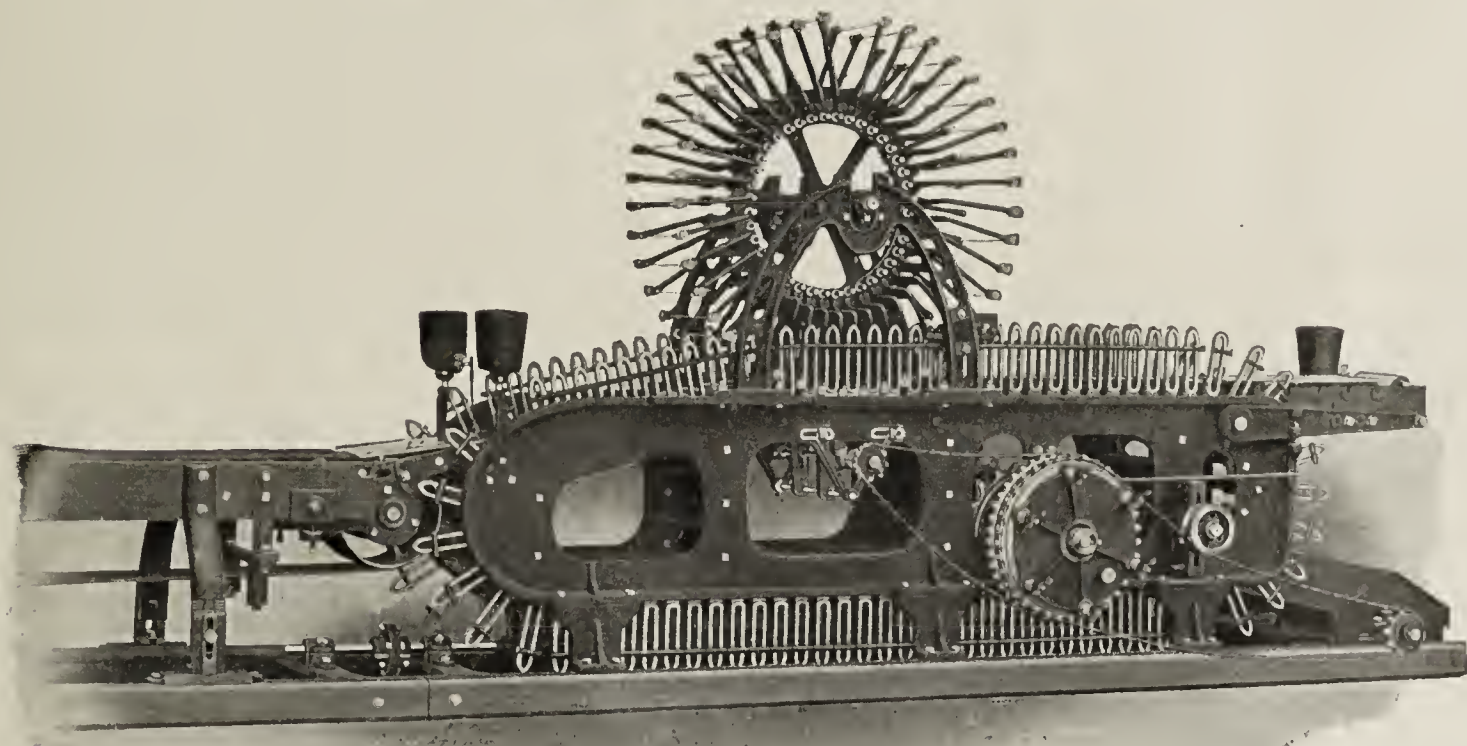


Quality

Quality hinges on two things—mechanical perfection and the best of material. These factors enter into the product of the House of Fate.



Automatic Table for cutting Hollow Ware in Multiple Lengths



AUTOMATIC SIDE CUT BRICK TABLE

The Table that is rapidly becoming recognized as the most successful and efficient brick table made. It gives an absolute down cut, and a fine quality of ware, with the least worry and expense. If you need a good brick table, ask us to tell you about this one.

The J. D. Fate Company

Plymouth, Ohio

Western Office, 604 Blake-McFall Bldg., Portland, Ore., A. E. Davidson

Eastern Office: 50 Church Street, New York City, Jas. A. Ridgeway, Representative

Manufacturers Equipment Co., Dayton, Ohio, Sales Agents

The Justice Radiated Heat Dryer—Successful Results Always Certain

Mention "BRICK AND CLAY RECORD" when writing to advertisers.

CLASSIFIED DEPARTMENT

For Sale.

Chambers' stiff-mud brick machine, complete with pugmill, capacity 75,000 per day.

Westinghouse engine, 150 h.p.

Casey-Hedges boiler, 165 h.p.

Heater.

2 Worthington pumps.

Frictional hoist.

No. 7 Pulsometer.

2 Double transfers

2 Single transfers.

4 Side dump cars.

Shafting, pulleys, belting.

Apply to Jacksonville Brick Co., Jacksonville, Fla. 6-2

FOR SALE.

Rebuilt Engines and Boilers at Reduced Prices.

ENGINES...CORLISS: 26x48 Filer & Stowell, heavy duty; 24x48 Hamilton; 18x42 Lane & Bodley; 16x42 Allis; 14x36 Lane & Bodley; 12x30 Lane & Bodley; 10x24 Hamilton.

ENGINES...AUTOMATIC: 19x18 Ball; 15x14 Ball; 14x14 Ideal; 10x16x12 Buffalo compound; 12x14 Green; 10x18 Buckeye; 12½x12 A. & S.; 9x10 New Victor; 8x14 Noyes.

ENGINES...THROTTLING: 20x24 H. S. & G.; 16x18 Skinner, 16x18 Ames; 14x16 Taylor; 14x14 Lewis Vertical; 12x13 New Enterprise; 12x12 Wells; 11x16 H. S. & G.; 10x12 Erie City; 9x16 Brownell; 8x12 Erie Engine Works; 7x14 Brownell; 6x6 Randle; 4x6 Velt & McDonald; 3x4, Kriebel.

BOILERS...STATIONARY: 72x18; 72x16; 66x16; 60x16, high pressure; 72x18 Standard; 72x16; 66x18; 66x16; 60x16; 54x14; 54x12; 48x16; 48x14; 44x14; 44x12, new; 36x16; 30x10.

BOILERS...FIRE BOX: 150, 100, 80, 70, 60, 50, 40, 35, 30, 25, 20, 16, 12, 10 H. P.

BOILERS...VERTICAL: 50, 40, 35, 30, 25, 20, 15, 12, 10, 8, 6, 4 H. P.

ELECTRIC GENERATORS: 3½ to 300 K. W., belted and direct connected, alternating and direct current with switchboards.

MOTORS: All sizes, both alternating and direct current.

CORN MILLS & FEED GRINDERS: All sizes.

EXHAUST FANS & BLOWERS: All kinds.

HEATERS: 500 H. P. Cookson, 400 H. P. Stilwell; 250 H. P. Cookson, 150 H. P. Cookson, 100 H. P. Stilwell, 50 H. P. Brownell.

PUMPS: All sizes, single and duplex.

SAW MILLS, and general wood working machinery.

MISCELLANEOUS: 87 ft., 10-in. three-ply 43-in. leather belt; 56 ft. double 24-in. leather belt and smaller sizes in leather, rubber and canvas stitched. Lathes, Planers, Shapers and Drills. Sole manufacturers of the celebrated "Leader" Injectors & Ejectors or Jet Pumps. Ask for circular.

THE RANDLE MACHINERY CO.
1733 Powers St. Cincinnati, Ohio.

For Sale.

35 h. p. Olds gasoline engine, new, run 4 hrs., perfect condition. \$375.00

35 h. p. Superior throttling, run on gas, fine order. 200.00

41½ h. p. Olds, good as new. 100.00

6 h. p. Fields Special, run just a few months. 125.00

40 h. p. Erie, full front boiler, fully equipped. 250.00

Bundy steam trap. 20.00

2-in. Foster reducing valve. 18.00

1 American Blower engine, low pressure. 50.00

The above steam goods are practically new.

2½-in. Gardner steam governor, fine order. 15.00

1-in. Pickering governor, good as new. 8.00

Iron plainer, 24 x 24-in. x 6-ft. automatic feeds, with check, fine order, Whitcomb make. 225.00

500 ft. of 2-in. pipe. 20.00

2-in. Jareka power pipe machine, with cutter and set of dies, used three months. 85.00

Hart pipe stock, 2-in. to 3-in., 4-handle, open dies, good as new, with cutter. 8.00

The above are bargains, write for further information. W. A. Fettes, Plymouth, O. 6-2-1

MACHINERY WANTED

Wanted.

One 125 or 150 h. p. water tube boiler, second hand. State price and condition of boiler. Address: 6-BC, care of this paper. 6-2-4

Dryer Cars Wanted.

A lot of double deck cast frame 24-inch gage. State condition, location and price. Address: Spot Cash, care of this paper. 4-TF.

Wanted.

Second-hand flat and rack cars, 18 in. gauge. Atlantic Terra Cotta Co., 1170 Broadway, New York City. 6-2-2

Wanted.

Good second-hand, wooden pallets for soft-mud brick. Excelsior Brick Co., Menomonie, Wis. 6-2

POSITIONS WANTED

Position Wanted.

As manager or foreman of brick plant; 25 years' experience, employed, reasons for change. Good references furnished. Address: 6-A, care of this paper. 6-2-P

Design or Remodel.

Let me help you design or remodel your hollow ware plant. I am a technical graduate, mechanical engineer, and draftsman. Six years' engineering experience, four in the hollow ware line. Roy D. Palmer, 948 Waterloo St., St. Clair, Mich. 6-2-1P

Wanted.

Technical graduate of several years' experience desires position with a future, with some big, long-headed firm. At present with large college. Excellent references. Address: 6-BD, care of this paper. 6-2-1P

Superintendent.

Open for engagement with reliable firm. Know the trade in every detail, by any process, and to any design, i. e., architectural terra cotta, salt glazed sewer pipe, paving block, front brick, fire brick, etc. Accustomed to men and large outputs, and handling the business throughout. Highest credentials. Apply to E. C. J., 510 S. Fifth St., West, Missoula, Mont. 6-1

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WANT

An Employee?
A Position?
To Buy Anything?

HAVE YOU
FOR SALE

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Land, Plant or
Anything Else?

"Brick and Clay Record"
Advertisements Bring Returns

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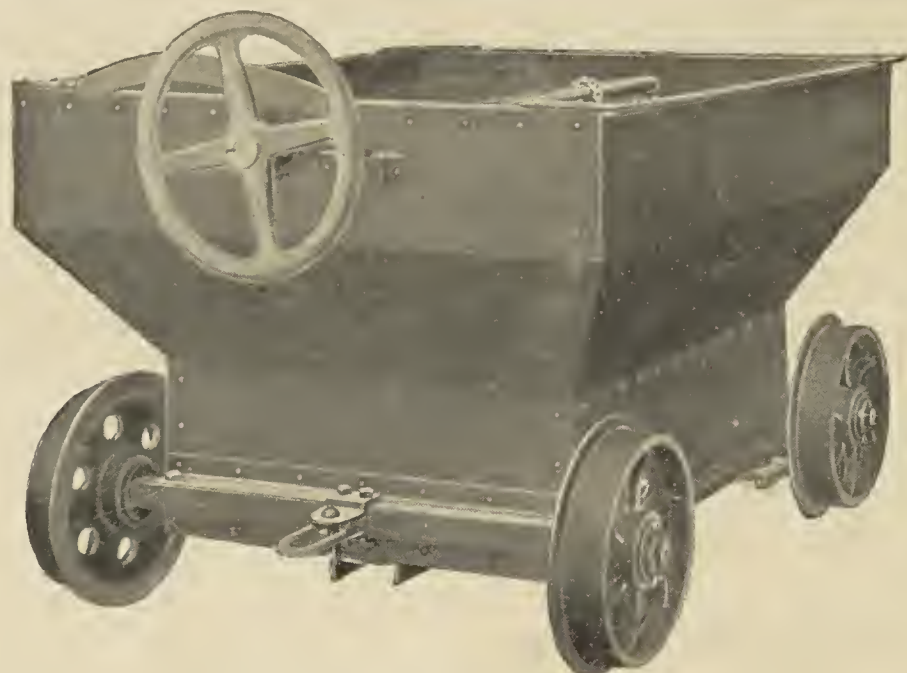


ONE MAN AND A MARION CAN MOVE THE EARTH
the quickest, the best, the cheapest way. Built in every size and style. Thousands are using them to dig their clay. Are you one of them?

Write for folder "PICTURE TALKS."

THE MARION STEAM SHOVEL COMPANY, MARION, OHIO, U. S. A.

Mention "BRICK AND CLAY RECORD" when writing to advertisers.



No. 246 Bottom Dump Car

"THE finest Clay Car
I have ever seen,"
says a man with twenty
years experience in the
brick Trade.

*Write for prices and state
track gage and capacity.*

The Ohio Ceramic Engineering Company

CLEVELAND, OHIO

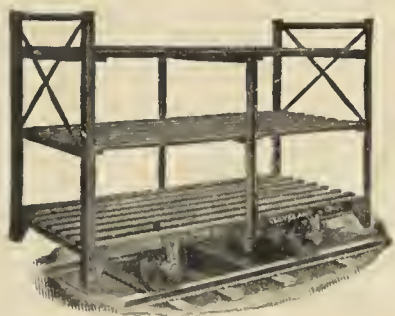
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555 W. Quincy St.

NEW YORK
1452 No. 50 Church St.

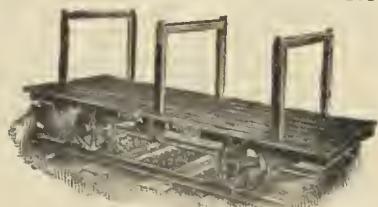
CINCINNATI
2622 Essex Place

PITTSBURG
1202 Fulton Bldg.

QUEBEC
A. D. Masson, 30 Nicholas St.



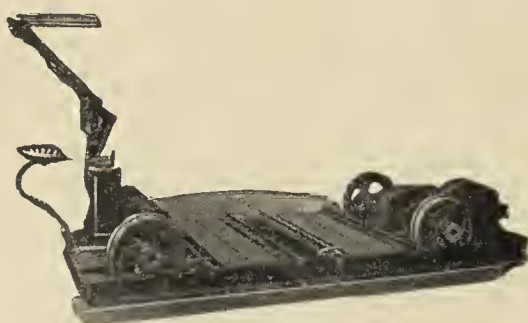
No. 1205
Triple Deck Dryer Car supplied with
or without decks of wood or steel



No. 126
Double Deck Steel Car shown
without upper deck



No. 145-C
Pressed Steel Top, Ball Bearing
Turntable; Patented



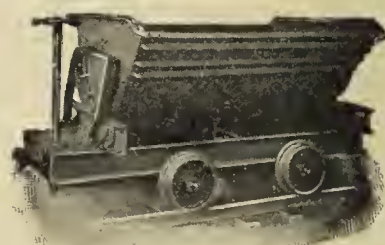
No. 913
Double Track Electric Transfer Car. Made with
one or more tracks. 110 or 220 volt current

If you have any material to move, you
should investigate our product. Atlas
cars and locomotives will reduce the
cost of transportation to a minimum.
The economy of electric locomotives
and electrically driven cars is no longer
a question. Write for catalogues.

**Dryer Cars, Dump Cars, Locomotives
Turntables, Track, Switches, Etc.**



No. 5750—Storage Battery Locomotive made
in several sizes.

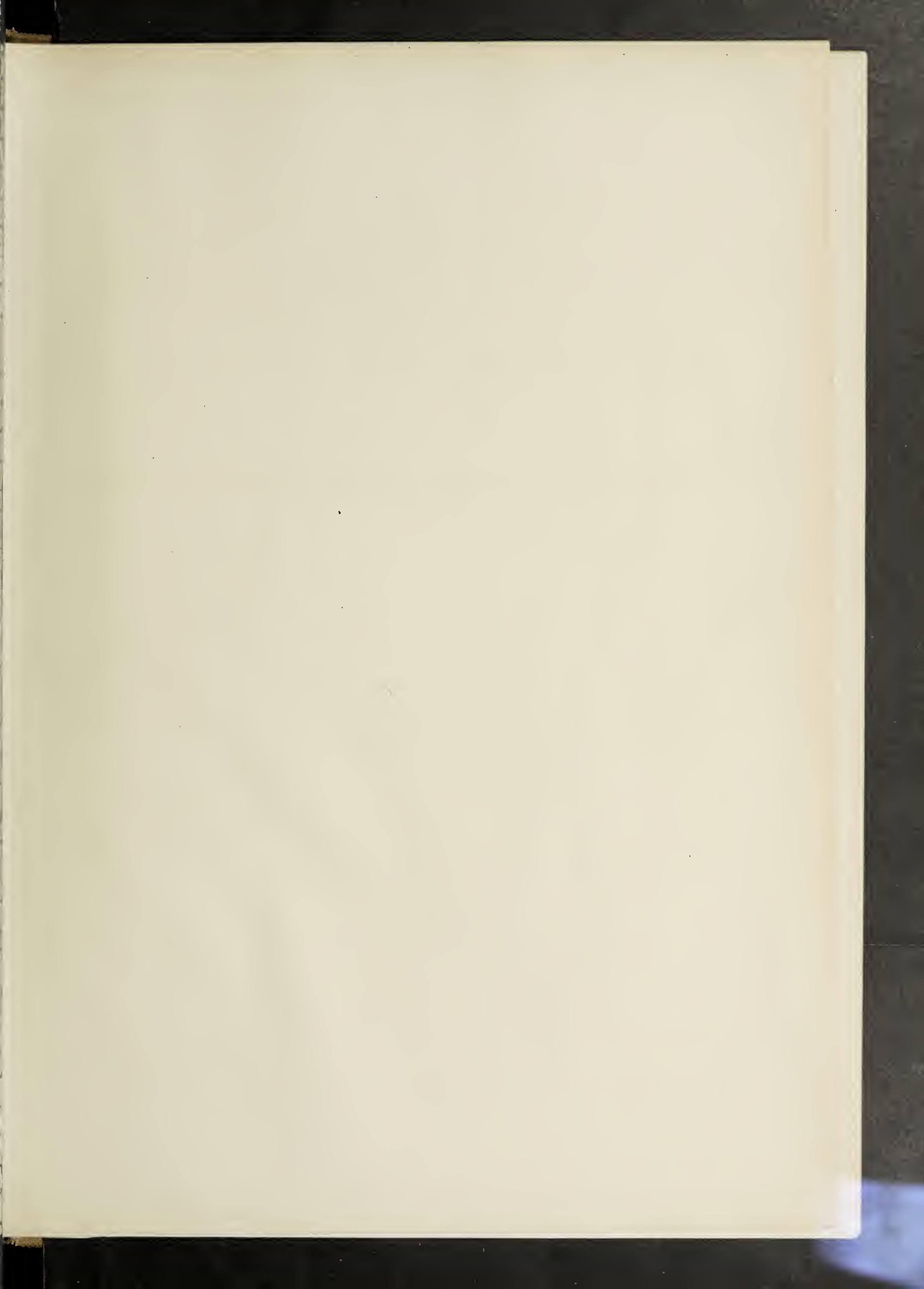


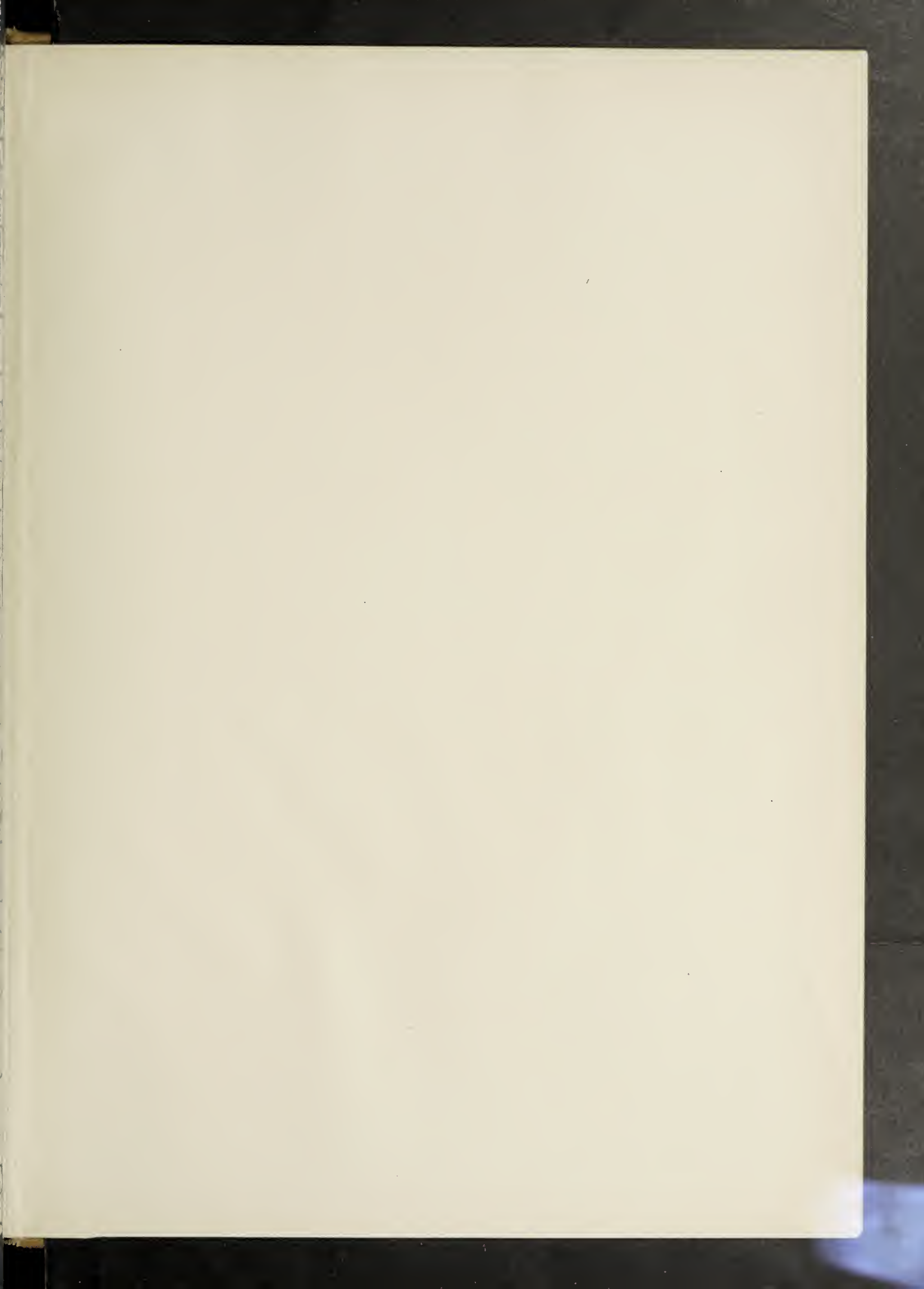
Rocker Side Dump Car
Also made in end dump. Above car made
for loading with steam shovel.

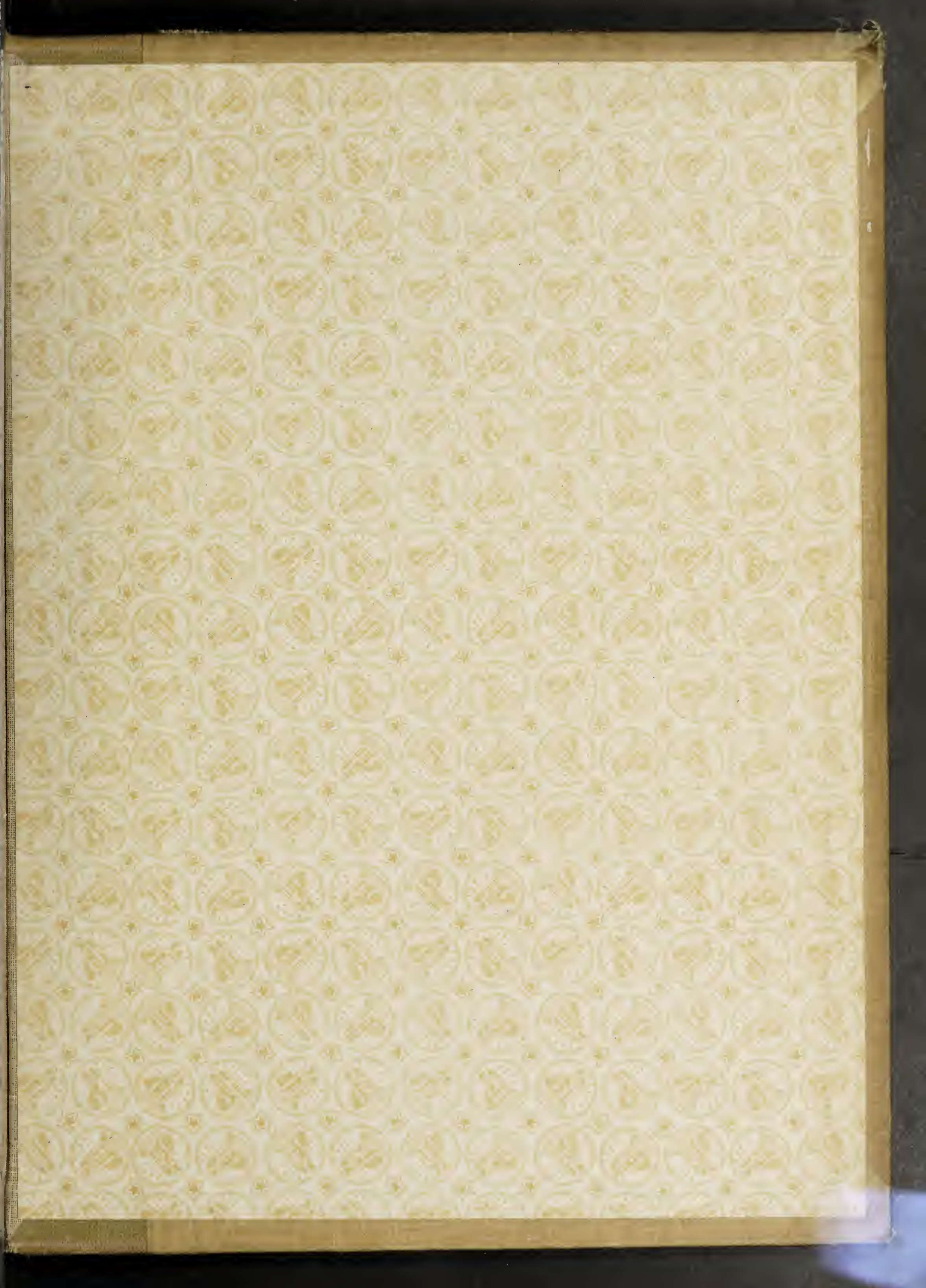


No. 277
Steel Quarry Car. End Dump

THE ATLAS CAR & MANUFACTURING CO.
Dept. "I" CLEVELAND, OHIO 1287 Marquette Ave.







UNIVERSITY OF ILLINOIS-URBANA



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